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EXAMINING THE USE OF LINEAR OUTLINES TO SUPPORT  
STUDENT WRITING

A dissertation submitted in partial fulfillment  
of the requirements for the degree of  
DOCTOR OF PHILOSOPHY  
to the faculty of the  
DEPARTMENT OF EDUCATION SPECIALTIES  
of  
THE SCHOOL OF EDUCATION  
at  
ST. JOHN'S UNIVERSITY  
New York  
by  
Dina Zoleo

Submitted Date 5/10/21

Approved Date 5/19/21

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Dina Zoleo

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Dr. Olivia G. Stewart

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# **ABSTRACT**

## **EXAMINING THE USE OF LINEAR OUTLINES TO SUPPORT STUDENT WRITING**

Dina Zoleo

Writing places heavy demands on students' cognitive capacity. Existing research suggests that planning before writing can help to alleviate this cognitive burden; thus improving the quality of student writing. In this explanatory sequential mixed-methods study, the researcher examined the efficacy of specific pre-planning tools on students' paragraph writing by assessing the pre-and post-writing assessment scores of students who were assigned to three different conditions- a group who planned their paragraph by using a Single-Paragraph Outline (SPO), which is a linear outline, a group that planned their paragraph by using a concept map, and a group that did not plan their paragraph with a specific planning tool. Through post-assessment questionnaires and semi-structured interviews, the researcher gained insights into students' perceptions of the writing tools. Based on the statistical analysis of the pre-and post-assessment scores, students who planned their writing with a SPO outperformed students who planned with a concept map and students who did not use a planning tool.

*Keywords:* outlining, concept maps, planning, pre-writing, organization of ideas, linear outlines, explicit writing instruction



## **DEDICATION**

To my beautiful daughter, Ava Grace.  
If you put your mind to it, you can accomplish anything.

## ACKNOWLEDGEMENTS

I would like to gratefully acknowledge the following people for their contributions in helping me successfully complete my dissertation. First, I would like to thank my extraordinary mentor, Dr. Stewart. Your patience, guidance and feedback (always made with love) helped me reach this milestone. You continuously pushed my thinking and you brought the best out of me. I am eternally grateful for your mentorship. Thank you for you everything.

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our beautiful working partnership began. Toni-Ann, my respect and admiration for you is immeasurable. Being able to pursue this degree together was a gift. I am so fortunate to work alongside you, but even more grateful to call you my friend. We did it!

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# CHAPTER 1: INTRODUCTION

## Background

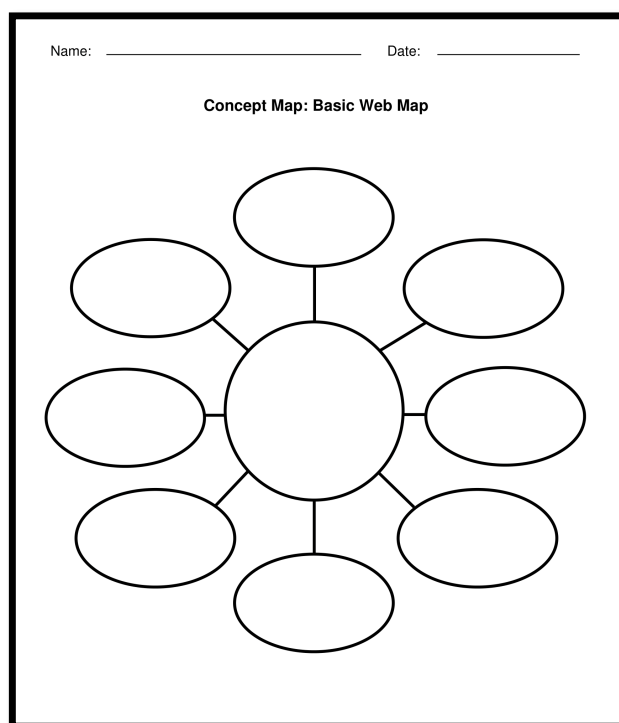
Writing is a multifaceted, complex cognitive process. Planning, one of the steps of the writing process, can help alleviate the heavy cognitive load associated with writing (Jagaiah et al., 2019; Troia, 2009). Planning, or the pre-writing process, should be a deliberate prelude to writing (Torrance, 2016). When students work from a plan, they do not have to figure out the overall structure of their writing as they go (Graham & Perin, 1997; Hochman & Wexler, 2017). As a result, they can devote their cognitive resources to selecting relevant details, word choice and revision, and ultimately create a piece of writing that is precise, engaging and coherent (Hayes & Flower, 1980; Kellogg, 1990).

The pre-writing process can be a key component in improving compositional quality, especially for novice, and struggling writers (Harrington et al., 1998; De La Paz, 1997; Kellogg, 1990). In studies that examined pre-writing strategies, graphic organizers and outlines were considered the most advanced form of planning (De La Paz, 1997). Egan (1999) defined graphic organizers as a “visual representation of knowledge, a way of structuring information, and of arranging essential aspects of an idea or topic into a pattern using labels” (p. 641). In the existing literature, terms such as visual organizer, graphic organizer and concept mapping are often used interchangeably. For example, Flood and Lapp (1990) use the term “mapping” to describe any illustrative material that helps children learn from texts. These can include charts, graphs, maps, flowcharts, or other structures that help students visualize their ideas before writing. The present study was designed to examine the usefulness of concept maps as a pre-writing strategy.


Concept maps include a central theme or topic in the center with connecting lines to additional circles, which enables the writer to generate, categorize and visualize related concepts or ideas (see Figure 1).

**Figure 1**

*Concept Map Worksheet*



In addition to exploring concept maps, I assess the usefulness of outlines as a pre-writing strategy. An outline, which is defined as a visual, linear structure, can help students organize their ideas in a logical and sequential order (Graham & Perin, 2007; Hochman & Wexler, 2017; Kellogg, 1990). In the Hochman Method, a research-based set of strategies for writing instruction, students are taught to use a linear and simple outline known as the Single-Paragraph Outline or SPO (see Figure 2) to plan their paragraphs (Hochman & Wexler, 2017).

**Figure 2***The Single-Paragraph Outline (SPO)*


**I. Single-Paragraph Outline**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

T.S. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

1. ....

2. ....

3. ....

4. ....

C.S. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

This linear outline provides students with a road map they can follow to plan the beginning, middle, and end of a unified, coherent paragraph by requiring students to create a complete topic sentence (T.S.) and concluding sentence (C.S.) on the solid lines and supporting details in key words and phrases on the dotted lines. Furthermore, the Single-Paragraph outline can facilitate analytical thinking because it helps students organize, sequence and categorize information in a logical matter while keeping in mind the necessity of clarity for the reader. Because students are encouraged to generate different supporting details on the dotted lines, they tend to be less repetitive and adhere to the main idea or topic of the paragraph (Hochman & Wexler, 2017). To help organize

their ideas, students can add a cue, or category, next to each numbered detail line on the outline (see Figure 3). The outline also enables students to construct any type of text structure: cause-and-effect, problem-solution, narrative, compare-contrast and persuasive. After students create their Single-Paragraph Outline, they can review it and make revisions by crossing out an irrelevant detail or by changing the sequential order of their details. Lastly, the SPO provides a simple format that students can easily replicate on a piece of scrap paper.

### Figure 3

*Ninth-grade Student's Single-Paragraph Outline (SPO)*

Single-Paragraph Outline	
	T.S. <u>Piggy, a wise boy, tries to hold on to</u> <u>the bit of civilization that is left.</u>
	_____
physical characteristics	1. .... Chubby, short, glasses, asthma .....
personality trait	2. .... loyal, Helpful, & educated .....
relationships	3. .... isn't respected .....
motivations	4. .... Home, safety, civilization & order .....
	C.S. <u>Even though Piggy does not have the</u> <u>best physical features, he has the qualities</u> <u>of a great leader.</u>

## **Statement of the Problem**

A great number of American students are struggling with writing proficiency (Graham et al., 2020; Sacher, 2016). According to the latest National Assessment of Educational Progress (NAEP), only 27% of eighth and twelfth grade students scored at or above the proficient level (National Assessment of Educational Progress, 2011). In that same assessment, 20% of eighth graders and 21% of twelfth grade students scored below basic, which means they were unable to perform at even the minimum standard for their grade level (National Assessment of Educational Progress, 2011). Similar findings have emerged from studies focused on students' writing proficiency. Previous research has established that many students lack the foundational skills needed to write a well-developed paragraph or composition (Graham & Perin, 2007; Jagaiah et al., 2019; McCutchen, 2006; Troia, 2009).

Writing is a demanding problem-solving task that requires thoughtful planning and skillful execution (Graham & Harris, 2009), and expert and novice writers approach writing tasks in different ways. For instance, skilled writers utilize the cognitive processes (e.g., planning, translating, reviewing) to manage a writing task, and tend to be more fluent in text production processes (e.g., generation and transcription), knowledgeable about writing content, and recognize the needs of the audience (Becker, 2006; McCutchen, 2006). Skilled writers know basic genre structures and use this knowledge to generate and organize their ideas (Becker, 2006; Graham & Harris, 2009; Troia, 2009). In addition, they set goals and develop plans to meet those goals (McKeown & FitzPatrick, 2018). In contrast, students with writing difficulties tend to engage in less planning and revising, frequently write down any information related to

the topic, and pay little attention to the intended audience or text organization (Jagaiah et al., 2019; Graham & Harris, 2009; McCutchen, 2006). As a result, they tend to generate text that lacks clarity, is poorly organized and less engaging than skilled writers (Graham & Perin, 2007; Troia, 2009).

Teaching novice writers strategies for planning can produce significant and lasting effects on composition skills (Cutler & Graham, 2008; Graham et al., 2020). However, several researchers posit that planning is a stage of writing that rarely gets enough attention and instructional time (Graham et al., 2020; Kirkpatrick and Klein, 2009; McKeown & FitzPatrick, 2018). In fact, when studying sixth grade students' writing processes, Torrance, Fildago and Garcia (2007) found that only 15% of sixth graders engaged in outlining before writing. Based on hundreds of hours observing writing instruction, Torrance (2016) noted that "planning is not taught, is not taught explicitly, is not modeled, and is often not required or assessed" (p. 721). Giving students time to plan without instruction on how to plan has had limited to no impact on improving students' writing outcomes (Cutler & Graham, 2008; McKeown & FitzPatrick, 2018). The process of writing places significant cognitive demands on the writer; therefore, students should learn explicit planning strategies that help improve their writing performance (Troia, 2009).

The ultimate aim of the planning process is to produce a final product that follows a hierarchical structure and has a clear top-to-bottom format (Fayol et al., 2012; McKeown & FitzPatrick, 2018). Developing a hierarchical outline enables students to focus on one element of writing at a time (Fayol et al., 2012; Kellogg, 1990). In a brainstorming diagram, such as a concept map, the writer sees a variety of ideas all at



once. While concept maps have been found effective in supporting the brainstorming of ideas, vocabulary relationships and concept building, they may require further investigation for their use in writing instruction (Nesbit & Adesope, 2006). One of the challenges of using a concept map is that when students convert their map to a written draft, they may find it difficult to take their ideas from the circles and figure out how to present those ideas in an organized, sequential, and logical order (MacArthur, 2006; Hochman & Wexler, 2017). If students generate ideas on a concept map as a pre-writing strategy, McCutchen (2006) suggests converting the map to an outline, which provides a linear organization; the sequence of that organization can then be altered as needed. A paragraph is a linear entity; the reader can only read one sentence at a time, from beginning to end (Fayol et al., 2012; Hochman & Wexler, 2017). Therefore, teaching students to plan a paragraph using a linear outline may lessen the need to juggle several cognitive processes during drafting, and help students predominantly focus on translating their ideas into text (Fayol et al., 2012; Kellogg, 1990; McCutchen, 2006; Troia 2009).

### **Purpose of the Study**

Existing research has examined the impact of pre-writing by often comparing writing products from students who planned versus students who did not plan before writing (McKeown & FitzPatrick, 2018; Torrance, 2016). However, few researchers have examined how specific planning formats, such as bubble maps and linear outlines, impact students' paragraph writing. The purpose of this present study was to determine if seventh and eighth grade students who use an SPO, a linear outline, to plan a paragraph significantly outperform students who use a Concept Map, and students who write without using any planning tool. Additionally, my goal was to learn if students who plan

with the SPO find it easier to logically order and sequence ideas before drafting their paragraphs.

## **Theoretical Framework**

Writing is a complex activity that has been studied from multiple theoretical perspectives. Researchers have gained a more comprehensive understanding of writing and its development through social and cognitive theories. For example, in social-cultural theories, writing is considered a product of social practices, community goals and the instructional environment (Graham et al., 2020). From a cognitive perspective, writing is viewed as a complex process that encompasses the execution and coordination of attention, executive functioning, memory, language, as well as writing knowledge, processes, and skills (Becker, 2006; Hayes, 2012). Cognitive theorists have shed light into the writing process by accessing the writer's thought process (Bereiter & Scardamalia, 1987; Hayes, 2012; Hayes & Berninger, 2014; Hayes & Flower, 1980; Rijlaarsdam et al., 2003). Given that the purpose of this proposed study is to determine if planning with a Single-Paragraph Outline facilitates students' ability to organize their thoughts systematically and sequentially before drafting a paragraph, the cognitive processes theory of writing is the theoretical framework underpinning my research.

Over the past several decades, composition theory and research has shifted from focusing on the product to the process of writing. Prior to the 1980s, writing instruction and assessment focused on the written product for generations of students. During the early 1960s, the National Council of Teachers of English (NCTE) committee commissioned a study to learn more about the teaching of composition (Braddock et al., 1963). In their 1965 "Research in Written Composition," Braddock, Lloyd-Jones and

Schoer provided one of the earliest discussions on teaching writing. However, they found only a rudimentary understanding of the writing process; thus, they identified the need for further research on the factors that affect learning how to compose (Braddock et al., 1963). In 1971, Janet Emig, a researcher inspired by “Research in Written Composition,” conducted a groundbreaking case study on the composing process of eight twelfth graders of average ability (Emig, 1971). By recording accounts of the students’ writing behaviors while composing, she discovered that the writing process encompassed several dimensions, including prewriting, planning, starting, stopping, contemplation of the product, and the teacher’s influence over the piece (Emig, 1971). After Emig’s research was presented to the field, other researchers began to explore the relationship between writing and the cognitive processes. Donald Murray contended in his manifesto titled “Teach Writing as a Process Not Product” that writing is not a product, but a process for almost everyone (Becker, 2006). In the late 1970’s, John Hayes and Linda Flower began seminal work in the area of cognitive research and writing, and stimulated a paradigm shift in how writing was conceptualized and taught (Berninger & Winn, 2006, Hayes & Flower, 1980; Kellogg; 1990).

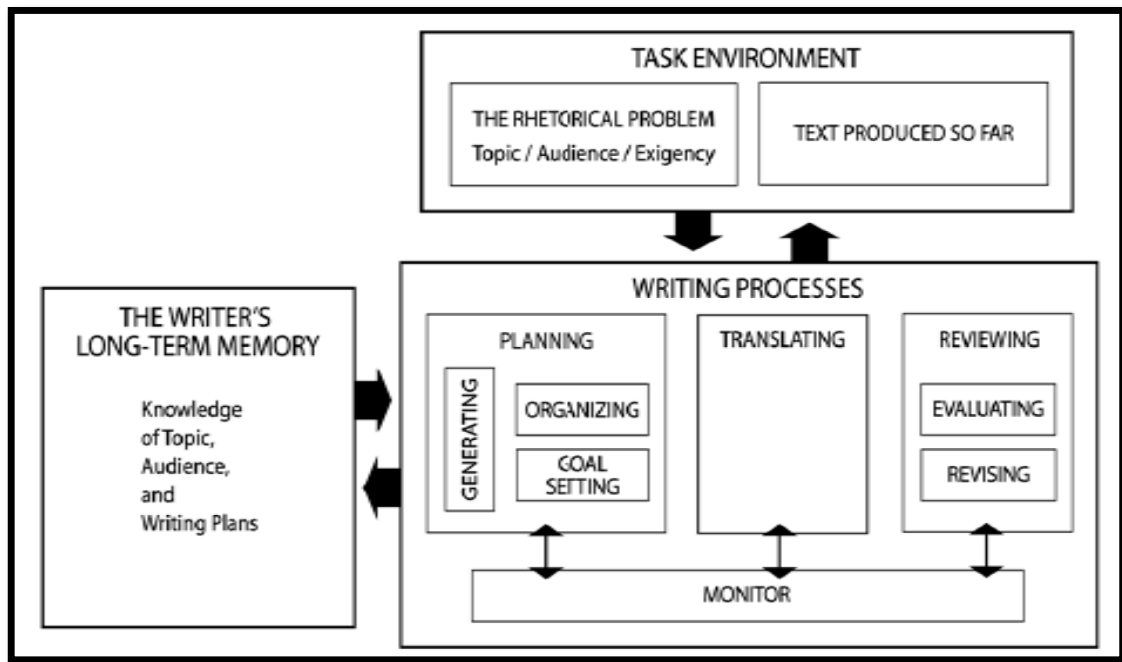
Hayes and Flower (1980) developed the cognitive processes in writing theory by examining the mental processes utilized during the act of writing. By asking college students to utilize a think aloud protocol analysis technique to make their thoughts visible while completing a writing task, Hayes and Flower observed that writing is a set of distinctive thinking processes (Becker, 2006; Torrance, 2016; Hayes & Flower, 1980). Based on their observation analysis, Hayes and Flower (1980) defined writing as a complex problem-solving process that involves the coordination of several mental

operations. Specifically, the writer must be able to manage factors related to the task such as the topic, the intended audience, and the amount of time available to generate a text; draw on the cognitive processes to create coherent writing such as retrieval of knowledge related to the assigned topic and previously effective writing plans from long-term memory; employ pre-writing strategies that enable organization of ideas; successfully translate the ideas into written text; and engage in consistent self-monitoring and revising of the text (Berninger & Winn; 2006; Fayol et al., 2012).

Dividing their cognitive model into three basic components (see Figure 4.), Hayes and Flower provide a clearer understanding of the mental processes that occur when writing (Becker, 2006, Torrance, 2016). The first component, the task environment, consists of everything beyond the writer that influences the writing task (e.g. topic, audience, deadlines, and text produced thus far). The second component, the writing process, encompasses planning, translating, and reviewing. The last component, the writer's long-term memory, includes knowledge of the topic and formerly used writing plans (Berninger & Winn, 2006, Fayol et al., 2012). According to Hayes and Flower, the writing process (e.g., planning, translating and reviewing) all operate under the executive functions, the task environment, and the writer's long-term memory (Berninger & Winn, 2006; Fayol et al., 2012). Planning includes setting goals, generating ideas, and organizing those ideas into a written plan. After a plan is created, the writer takes the material from the plan and formulates sentences. In the reviewing operation, the writer's goal is to improve the quality of the text during the translation process. These cognitive processes can be applied recursively throughout the writing process (Becker, 2006; Torrance, 2016).

**Figure 4**

*Pictorial Depiction of the Hayes and Flower's (1980) Cognitive Model*



Hayes and Flower's pivotal work laid the groundwork for additional research into the writing process. In 1987, Carl Bereiter and Marlene Scardamalia expanded the 1980 Hayes and Flower's model by proposing that the central difference between novice and skilled writers rests in the goals towards which writing is directed (Deane et al., 2008; Torrance, 2016). For example, novice writers typically employ a knowledge-telling model of writing, which consists of writing whatever comes to mind, without planning or organizing, and then directly transferring the information into text (Galbraith & Torrance, 1999). In contrast, skilled writers tend to utilize a knowledge-transforming model of writing, which includes formulating ideas, synthesizing and analyzing information, and persuading and problem-solving (Bereiter & Scardamalia, 1987; Torrance, 2016). Requiring a much higher-level of thought process, knowledge-transforming involves planning text with a focus on both content generation (what to write), as well as rhetorical

planning (how to write) (Bereiter & Scardamalia, 1987; Galbraith & Torrance, 1999; Torrance, 2016). According to Bereiter and Scardamalia (1987), the movement from knowledge-telling to knowledge transforming occurs through a series of instructional strategies. In particular, they posit that constructing a hierarchical outline facilitates the process of generating content in service of satisfying the writer's rhetorical goals (Bereiter & Scardamalia, 1987; Galbraith & Torrance, 1999).

In an effort to further explain the cognitive capacity involved in the writing process, Hayes's (1996) revised version of the 1980 Hayes and Flower's model focuses specifically on long-term memory, task schemas, topic, audience, and genre knowledge. In addition, Hayes's 1996 model acknowledges the limited capacity of working memory and how it can constrain writing (Deane et al., 2008; Torrance, 2016). Building on this revised model, Hayes and Berninger developed their most recent cognitive processes in writing theoretical framework to include a focus on novice writers and students with writing difficulties (Hayes & Berninger, 2014; Rourke et al., 2018). In order to help students use their cognitive resources effectively when writing, Hayes and Berninger suggest teachers incorporate writing schemas as part of their writing instruction to develop students' knowledge of genre, structures and formats, and strategies for producing text (Rourke et al., 2018). Similarly, in a study tracking how the writing process operates within the task schema of different cognitive writing models, Rijlaarsdam, Couzijn, and van den Berg (2003) found that genre has a major effect on cognitive effort. They maintain that the more practice a writer has with different genres, the less working memory is taxed (Rijlaarsdam et al., 2003). Graham et al., (2020) contends that when writers use genre structures, including argumentative, informational,

and narrative text structures, to generate and organize relationships among content appropriate to each genre element, they acquire new learning. Furthermore, by including key elements of the genre and relevant supporting details on an outline, students' cognitive resources are free to focus on the drafting stage (Torrance, 2016).

Few activities are as cognitively demanding as writing (Kellogg, 1990; Torrance, 2016). In order for students to produce high-quality text, they must generate a series of ideas and logically organize and sequence those ideas, ensure that the text has accurate spelling and grammar, and tailor their language for the intended audience (Fayol et al., 2012). If a writer has to focus attention on all of these aspects of writing at the same time, the cognitive system may become overloaded (Kellogg, 1990; Sweller, 1988). However, during planning, writers can focus on addressing one element of writing at a time to reduce issues of cognitive load limitations (Becker, 2006; Fayol et al., 2012; Kellogg, 1990). By generating an outline before writing, the writer sees the macrostructure of the text sketched out in a hierarchical form, which enables them to devote time and cognitive resources on drafting (Kellogg, 1990). Using routine planning strategies can reduce some of the cognitive burden involved in remembering structures and formats (Deane et al., 2008; Kellogg, 1990). With ample practice, creating outlines can become relatively automatic for students, and easily retrieved from long-term memory (Deane et al., 2008; Kellogg, 1990; Rijlaarsdam et al., 2003; Torrance, 2016).

### **Significance of the Study**

Writing is an important skill that all children need to develop; it is critical to success in both school and the workplace. Writing is the primary tool for expressing knowledge, and one of the main response outputs teachers use to assess students'

educational performance (Torrance, 2016). If students are not taught how to write effectively, they may face significant barriers in education, employment and other life pursuits (Coker & Lewis, 2008; Sacher, 2016; Santangelo & Olinghouse, 2009). A wide-range of jobs require employees to produce written documentation. A recent job outlook survey revealed that 82 % of public and private employers value writing proficiency, and that it directly affects their hiring and promotion decisions (National Association of Colleges and Employers, 2019). In an effort to prepare students for occasions when they may have to write quickly and on demand, whether in college classrooms or in the workplace, several states have adopted ELA standards that require students to use careful planning, drafting and revision to produce high-quality writing (Rourke et al., 2018). For students, especially struggling writers, planning must be explicitly taught, modeled, and scaffolded so that students can achieve autonomy in writing, and ultimately meet or exceed standards.

Writing is a powerful tool for effective communication, and it also improves one's capacity to learn (Graham et al., 2020). When writing instruction is embedded in the subjects students' are learning, and not taught in isolation or divorced from content, writing can enable students to express their thinking. By making students' thoughts visible, writing externalizes cognition and gives them the opportunity to access thought processes that may have otherwise been inaccessible (Berninger et al., 2006). Furthermore, writing gives students the opportunity to synthesize information from multiple sources and perspectives, discern what information is relevant and should be shared, and understand how to organize and present this information to a range of audiences (Troia, 2009). In fact, organizing and sequencing information can positively



impact student learning by deepening their knowledge of the topic (Torrance, 2016). Generating an outline can enhance the learning process. As Galbraith and Torrance (2004) point out, “a good outline can serve as an economical representation of your thoughts as they exist in working memory” (p.83).

Given that writing is a complex activity that requires coordination of a variety of different cognitive processes, it is critical that students receive the best possible instruction around planning. The cognitive models discussed earlier in this chapter suggest that teaching students how to plan may be a solution to lessening the cognitive burden of writing. Yet, despite the importance of planning, there remains a paucity of research on the types of plans students use before they write. Over the course of my teaching career, I have seen far too many adolescent students struggle with writing. While well-intentioned, the tools that I provided to students often did not result in improving their writing performance. In this study, I sought out to determine whether the type of planning tools students use to plan their writing affect the quality of their writing.

### **Research Questions**

- 1) Do seventh and eighth-grade students that use a Single-Paragraph Outline (SPO) before writing a paragraph earn a higher scale range score than students who use a concept map and students who do not use a planning tool?
- 2) What are the seventh and eighth-grade students’ perceptions of the planning process they used to write their post-assessment?

## Hypothesis

$H_0$ : There will be no statistically significant difference in the pre-and post-writing assessment scaled scores of seventh and eighth- grade students who use an SPO before writing a paragraph, students who use a concept map before writing a paragraph and students who do not use any planning tool.

## Definition of Terms

**Comparative Judgment.** A process where raters compare two pieces of writing and decide which is better. Through a series of repeated comparisons, the resulting data can be modeled using a statistical model and placed on a measurement scale, which shows the relative quality of the scripts (Pollitt, 2012).

**Concept Map.** A type of graphic organizer used to help students represent ideas through a conceptual design (sometimes enclosed in shapes, circles, boxes and triangles.)

**Linear outline.** An outline that enables the writer to organize their ideas in logical sequential or hierarchical way.

**Multiple-Paragraph Outline (MPO).** A linear outline used in the Hochman Method. It is a plan for used for a composition. It has an area for an introduction, a conclusion and body paragraphs (Hochman & Wexler, 2017),

**Single-Paragraph Outline (SPO).** A linear outline used in the Hochman Method. It is a plan for one paragraph. The SPO format includes a solid line for T.S. (topic sentence) and C.S. (concluding sentence) as well as four numbered lines for details (Hochman & Wexler, 2017).

**Text Structures.** The organization of a paragraph of essay. Narrative and expository genres often have different purposes and audiences; therefore, they require distinct

structures. Common text structures include: description, sequence, compare and contrast, cause and effect, problem and solution, and persuasive (Torrance, 2016).

**Planning.** Planning is the engaging, collection, and organization of ideas in preparation for and throughout the writing process. A plan can be an outline, clustered notes, a web, a storyboard, or any other organized grouping of ideas that help the writer address the writing prompt, assignment, genre or intended audience( McKeown & FitzPatrick, 2018). Planning is an iterative and recursive phase in cognitive theoretical models (Bereiter & Scardamalia, 1987; Hayes & Flower, 1980; Kellogg; 1990). In the existing research, planning is sometimes interchanged with prewriting. For the purposes of this proposed study, the term planning will be used a catchall.

**Planning Tool.** In this proposed study, the term planning tool refers to any specific structured format (e.g., webs, visual organizers, diagrams, outlines, templates) students are given to plan prior to writing.

**Scratch Paper.** The term scratch paper is commonly used with students in the districts participating in the study. It is a blank piece of paper that students can use to scribble notes or ideas while planning.

**Visual Organizers.** Visual organizers are drawings or formats that represent information to show the relationships between ideas. For the purposes of this study, the term is used to describe any tables, charts, graphs, timelines, diagrams, clusters and webs students to use to plan before writing.

## **CHAPTER 2: LITERATURE REVIEW**

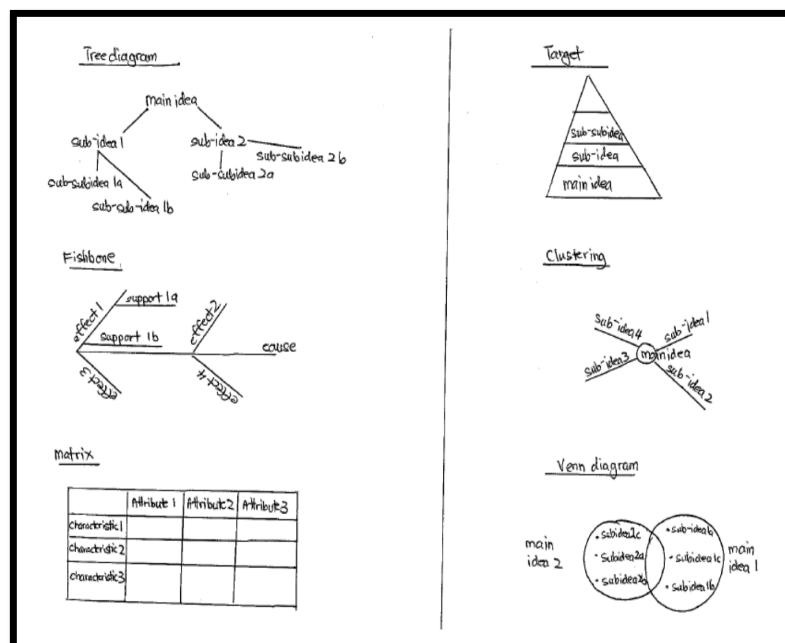
This literature review examines the existing research relative to this study. The chapter begins with an overview of previous studies that focus on planning with visual organizers before writing. An emphasis is placed upon research related to outlining and concept mapping. The review also explores key themes that materialized from prior research. For instance, it examines how explicit instruction of planning affects the quality of student writing, and focuses on the effects of students utilizing technology for planning. Finally, the chapter concludes with a summary of previous research aimed to learn more about students' perceptions of the writing process.

### **Using Visual Organizers for Planning**

Several studies suggest that planning strategies can lead to improved compositional quality, especially for novice and struggling writers (Harrington et al.,1998; Kellogg, 1990; Lee & Tan, 2010; Troia et al.,1999). In particular, researchers have noted that planning with visual organizers can fulfill the cognitive needs of novice writers by enabling them to view the relationship between their ideas and concepts (Lee & Tan, 2010; Troia et al.,1999). Troia and colleagues (1999) examined how brainstorming and sequencing ideas while writing stories and essays impacted the overall writing quality of three fifth-grade students identified with learning disabilities. At the beginning of the study, students were given a baseline writing assessment without receiving any instruction on planning. After reading the baseline writing prompts, students immediately plunged into writing and did no planning. To help the students become more skillful writers, instructors introduced the students to several visual organizers including brainstorming and sequencing ideas on a small chart. On the post-

instruction writing assessments, raters used a modified version of a grammar story scale to assess the stories, and an 8-point scale to assess the quality of the compositions. The overall findings showed that schematic structure of the students' stories and the quality of the essays was considerably higher than the baseline scores. Learning how to brainstorm, list and sequence ideas before writing their stories and essays had a positive effect on students' writing (Troia et al., 1999).

Similarly, Harrington, Holik, and Hurt (1998) sought to understand the phenomenon of planning with visual aids and students' writing performance. In a fifth-grade class comprised of struggling writers, ELL students, and students with learning disabilities, students were given a baseline writing assessment. After the pre-test, the fifth-graders were introduced to a variety of graphic organizers, including a T-chart and a Venn diagram. Utilizing a writing rubric, Harrington and colleagues (1998) compared students' pre-writing and post-writing assessment scores. As a result, they found an increase in the number of students using a graphic organizer effectively from the first assessment to the second assessment. Planning with graphic organizers resulted in students staying focused, more organized, and writing with more details (Harrington et al., 1998). This finding is congruent to the work of Lee and Tan (2010) who conducted a study in an Asian university with thirty-six first-year engineering students, identified as novice writers. Over the course of seven weeks, the participants were introduced to specific graphic organizers, including a tree diagram, a target diagram, a matrix organizer, Venn diagrams, and a fishbone and clustering organizer (see Figure 5).

**Figure 5***Variety of Visual Organizers*

*Note.* Reprinted from “Scaffolding writing using feedback in students; graphic organizers- novice writers’ relevance of ideas and cognitive loads”, by Lee, C., & Tan, S. (2010). *Educational Media International*, 47(2), p.8.

In weeks four, five and six, the participants were directed to use the organizers to generate writing assignments and complete mental difficulty questionnaires designed to measure the extent to which the organizers helped lessen the cognitive load. The writing assessment scores were based on the ratio of relevant and non-relevant ideas. Lee and Tan (2010) found that the relevance of ideas improved on each writing assessment. Overall, their findings appear to confirm the notion that visual organizers enable novice and struggling writers to see their thinking, which can scaffold students’ metacognitive load (Harrington et al., 1998; Lee & Tan, 2010).

## **Using Concept Maps for Planning**

The idea of concept mapping was originally derived in the 1960s from Ausubel's assimilation theory, which posits that the key determinant of learning is one's prior knowledge (Novak & Cañas, 2006). According to assimilation theory, learning is most productive and meaningful when prior knowledge is connected with new information. During the 1970s, educator Joseph Novak developed the notion of concept mapping in an effort to help students visually represent the relationship between previous knowledge and new information (Novak, 1991). In his view, concept maps facilitate learning by helping students graphically illustrate the relationships between concepts and ideas. In a meta-analysis of 50 studies focused on using concept maps as a learning strategy, Nesbit and Adesope (2006) discovered that in comparison with reading text passages, listening to lectures, and sharing in classroom discussions, concept maps were more effective for retaining content knowledge. In addition, they found concept maps to be an effective instructional strategy for brainstorming ideas, increasing vocabulary, and enhancing reading comprehension (Nesbit & Adesope, 2006). Over time, concept maps became increasingly popular as a pre-writing tool in classrooms because they enabled students to visualize the different ideas they planned to use in a written text (Nesbit & Adesope, 2006; Novak & Cañas, 2006).

In an effort to learn whether concept mapping benefits EFL learners as a planning tool, Ojima (2006) examined applications of the strategy through classroom observations, semi-structured interviews, and writing samples of three adult Japanese EFL students, Chie, Miho and Yuri. Over the course of four weeks, Ojima (2006) observed the adult learners being taught how to use concept mapping as a pre-writing strategy. Through

whole-group instruction, the teacher modeled the strategy to activate students' prior knowledge before asking them to transfer the ideas in the maps to a written product. The participants were given a total of four writing tasks to complete in-school and at home. The first two assignments required no planning and the last two assignments included planning with a concept map. Differences in the writers' individual composition scores were calculated using Hamp-Lyon's holistic scoring scale. Ojima (2006) reported that Chie and Miho's compositions scores improved in the post-assessments, and Yuri's assessments showed no obvious differences. In reviewing the students' final composition and concept maps, some interesting findings emerged. For example, Chie incorporated a few ideas from the concept map into the composition. On the other hand, Miho transferred every idea from the concept map into her composition. She also jotted down a topic sentence at the top of the concept map, and a concluding sentence at the bottom. Lastly, Yuri failed to create a map. Instead, she created a bulleted list of complete sentences that she transferred directly into her composition.

In addition to classroom observations and analysis of student work, Ojima's (2006) conducted semi-structured interviews to gain even greater insight into the students' perceptions of using concept mapping for planning before writing. The students' revealed several advantages and disadvantages of applying concept mapping to the writing process. Chie explained that concept mapping helped her with generating ideas because she could visualize them on paper; however, she also mentioned that she found it difficult to select the most relevant ideas from the map to include in her paragraph. Chie explained that she often skips the concept mapping step in the writing process because she finds it to be confusing. Thus, she will only draw a concept map if it



is a task requirement. Unlike Chie, Miho said that she gets anxious thinking about writing a composition without using a concept map because she likes brainstorming her ideas before writing. Interestingly, she mentioned that she tries to create a simple organizational structure when drawing her concept map, and finds it helpful to include a space for a topic and concluding sentence. Similar to Chie, Miho stated that she also skips the concept mapping step on timed exams because she would rather dedicate the allotted time to the actual writing process. Finally, while Yuri recognized the potential benefits of using a concept map in pre-writing, she explained that she would rather make a map in her mind, and didn't feel she needed to use it as a planning tool. Ojima's (2006) points out that Yuri had no prior experience with using a concept map, whereas Miho and Chie were utilizing the strategy for several year prior.

Consistent with the literature, the learners expressed the benefits of visualizing their ideas on a piece of paper. During the interviews, participants also indicated the drawbacks of using the map as a planning tool, which may hinder their use of the strategy in the future. Acknowledging that a small sample size and "lack of statistical power" is a limitation of the present study, Ojima (2006) calls for researchers to further investigate concept maps as a pre-writing tool (p. 582). Despite the study's limitations, the analysis of multiple data points (e.g., composition data, classroom observation notes, interviews, questionnaire responses from the learners, concept maps) unearths important findings and raises new questions about using concept maps to plan before writing.

### **Using Outlines for Planning**

Other researchers have sought to understand how pre-writing strategies benefit writing performance. Ronald T. Kellogg (1990), a cognitive psychologist, studied the

effectiveness of pre-writing plans with college students. Drawing on Hayes and Flower's cognitive processes in writing theory, Kellogg (1990) maintains that planning extensively before writing can alleviate the cognitive load, improve the fluency of language production, and enhance the overall quality of the final product. Thus, Kellogg's (1990) views on writing production align with the overload hypothesis, a theory which suggests that pre-writing may help free up space in working memory, and allow the writer to expend their cognitive resources on language production. In contrast, some researchers view writing through the interaction hypothesis theory, which contends that planning before writing is not beneficial and can actually hinder writing performance (Kellogg, 1991). In particular, Peter Elbow, the author of *Writing without Teachers*, warned against planning with an outline since it can stifle the writer's flow of ideas (Elbow, 1981). Instead, he proposed that writers forego the planning process and begin writing the first draft immediately (Elbow, 1981). One of the goals of Kellogg's (1991) study was to investigate the merits of the overload hypothesis by examining two pre-writing strategies—outlining and clustering, which is described as choosing a topic word and expanding with surrounding details in a cluster formation.

Two hundred and seven participants were randomly assigned to three conditions: (1) no pre-writing time (control group); (2) ten minutes of planning by clustering; (3) ten minutes of planning by generating an outline. Two scorers rated the writing pieces for content and style by using a seven-point scale for each domain. In addition, raters also assessed fluency by counting the numbers of words written per minute. According to Kellogg (1990), the study's findings provided “convincing experimental evidence for the benefits of outlining” (p. 340). Both the quality and style of the students' compositions in

the outlining condition improved significantly. However, the clustering condition resulted in a higher quantity in the number of ideas generated, but not the quality of ideas produced compared with outlining. One unanticipated finding was that clustering hindered the overall fluency of the writers compared to the outlining and no pre-writing conditions. Kellogg (1990) posited that the results support the overload hypothesis with regards to outlining because creating a hierarchical outline allows the writer to both generate and organize ideas. His general conclusion is that outlining enables writers to organize their ideas better prior to writing, which allows them to devote more of their cognitive resources to formulating these ideas effectively in a written text (Galbraith & Torrance, 2004; Kellogg, 1991).

Kellogg's (1990) research on outlining is complimented by David Galbraith and Mark Torrance's (2004) study on drafting using the interactive strategy. Unlike other theories focused on pre-writing, the interactive strategy calls for the organization of ideas to be postponed till after writing rather than being applied before writing (Elbow, 1983). Determined to prove that the interactive strategy was "misinterpreted by researchers," Galbraith and Torrance (2004) set out to compare it with strategies tested in previous research related to planning and drafting (p. 67). To accomplish this, they tested two basic models of drafting: one where the writer plans their text by generating an outline before writing, and the other where the writer develops their ideas during the writing process (Becker, 2006; Galbraith & Torrance, 2004). One hundred and two undergraduate students were asked to write an argument within a fifty-minute time frame, and the compositions were scored by two-raters. For Galbraith and Torrance(2004), the most striking observation from the data comparison was that the outlining condition

outscored the group that did not plan. Therefore, their results confirm Kellogg's research that developing an outline before writing enhances the overall quality of text (Becker, 2006; Galbraith & Torrance, 2004; Kellogg, 1991).

### **Linear Plans and Text Structures**

As students advance to middle and high school, they are often required to write using a variety of different text structures, including compare and contrast, problem-solution, cause and effect and order and sequence (Torrance, 2016). Skilled writers possess text-structure knowledge, which has been linked to writing performance (Becker, 2006; Troia, 2009). In a similar vein, researchers have found a correlation between planning the structure of the text prior to writing and higher writing quality (Rijlaarsdam et al., 2003). Kirkpatrick and Klein (2009) examined a planning strategy designed to help students plan the structures for compare-contrast essays prior to writing. Eighty-three seventh and eighth grade students from a variety of socio-economic backgrounds and academic abilities participated in the study. The students were taught how to use the Information, Aspect, Paragraph, Number (IAPN) table, which is a linear organizer that is divided in columns with headings: information, aspect, paragraph and number. Students add corresponding information in each section of the organizer. Before receiving instruction on how to plan using the IAPN table, all students were asked to write a compare and contrast essay about one topic as a pretest. Following a week of instruction on the IAPN table, students were asked to write a compare and contrast essay about a different topic, which was used as a post test. All scoring of pre and post tests were done by two raters who scored the essays holistically on a ten-point scale. Based on the results, the students made impressive gains in the instruction condition, which suggests that

students' writing can be improved by having them learn a genre-specific writing plan (Kirkpatrick and Klein, 2009).

Unlike previous research on compare and contrast instructional studies, Kirkpatrick and Klein's (2009) study differs in a few ways. First, the researchers designed the strategy instead of the students' generating their own plans because it was anticipated that the students would not spontaneously create a plan that addressed the specific aspects of the compare-contrast text structure. Second, the students were required to memorize the plan and reproduce it from memory at the posttest since the researchers wanted to assess if the students developed an internal representation, or schema, for the plan's structure. Lastly, the students were not prompted to use the table as their written plan during the post test. However, all but one student sketched the IPAN table on scrap paper, which indicates that students internalized the structure. In light of my research focus on linear outlines, all of Kirkpatrick and Klein's (2009) findings are extremely insightful; yet, one in particular caught my attention.

Commenting on the reasons they believe the IPAN table helped the seventh and eighth graders plan effectively, Kirkpatrick and Klein (2009) state:

“Another important organizational element of the IAPN plan was numbering the information on the table. The fact that the comparisons are already in a linear written form in the plan likely makes it easier for students to translate these comparisons into a logical, linear written format for the text itself” (p. 318).

These findings highlight the need for further research on linear formats and student writing performance.

## Explicit Instruction of Planning

Providing direct and explicit instruction in how to plan, draft, and revise has resulted in positive outcomes on students' writing and learning (Graham et al., 2016). Graham and Perin (2007) posit that teaching novice writers strategies for planning is critical for producing strong and lasting effects on composition skills. While instruction in planning has shown to improve students' writing performance, it is not enough to simply hand students a plan without teaching them *how* to actually use that plan (Graham & Harris, 1999; McKeown & FitzPatrick, 2018). In order to improve student writing, it is important that educators choose the appropriate strategies and interventions for all writers, especially struggling writers. In a meta-analysis of 180 experimental design studies on strategy interventions for adolescent students with learning disabilities, Swanson and Hoskyn (2001) reviewed literature on *how* information was taught rather than *what* was taught. They categorized the interventions they reviewed into eight factors- questioning, sequencing and segmentation, explicit skill modeling, organization and explicit practice, small-group setting, indirect-teacher activities, technology, and scaffolding. Interestingly, the only factor to contribute to a significant variance to effect size was organization and explicit practice (Swanson & Hoskyn, 2001). Thus, Swanson and Hoskyn (2001) posited that adolescent students with learning disabilities benefit from learning how to organize and having the skill reinforced through explicit modeling and practice.

Most of the research on writing acknowledges that the composing process is a cognitively challenging task. Skilled writers utilize a set of cognitive strategies to monitor their writing process, which has been characterized as self-regulation (Graham & Harris,

1999; Graham & Perin, 2007). Self-regulation is the ability to consistently manage one's own cognitive behavior when writing (McKeown & FitzPatrick, 2018). In their discussion of the cognitive processing theory of writing, Hayes and Flower (1980) note "a great part of skill in writing is the ability to monitor and direct one's composing processes" (p.39). To support students in acquiring self-monitoring skills in writing, Karen Harris and Steve Graham created an instructional approach known as self-regulated strategy development (SRSD), which has been utilized in a variety of academic areas including reading, spelling, math, and writing (Graham & Harris, 1999). One of the goals of SRSD is to develop students' knowledge of writing by teaching them powerful skills and strategies involved in the writing process. For example, using mnemonics, a tool that helps students remember a specific part of the writing process or writing genre formula, can reduce the cognitive load by providing students with a skeleton of what is required (Unzueta, 2009). Thus, using mnemonics can help to make the writing process simpler for students. SRSD also incorporates visual organizers in the writing approach because they give students pictorial or graphical ways to logically organize their ideas (Graham & Harris, 1999).

Embedding self-regulatory strategies in writing instruction has positively impacted student writing performance. Studies have examined how self-regulation strategies combined with explicit instruction in planning can help students organize their writing (De La Paz, 1997; Chalk et al., 2005). The results of these studies have been promising. For instance, in meta-analyses examining writing interventions across elementary, middle and high schools, SRSD has consistently yielded higher effect sizes than all other writing interventions reviewed (Graham et al., 2013; Graham & Perin, 2007;

McKeown & FitzPatrick, 2018). Other researchers have furthered analyzed the effects of SRSD and explicit writing instruction. Susan De La Paz (1997) conducted a single subject experiment with fifth, sixth, and seventh grade students with learning disabilities and low IQ scores. Students were explicitly taught how to use the Think, Plan, Write and Say More method to plan their persuasive essays. Prior to receiving direct instruction on using the approach, students spent little to no time planning. In fact, most students took no longer than six minutes to write their essays on assessments.

During three consecutive sessions, students received instruction on how to use the Think, Plan, Write and Say More method. De La Paz (1997) assessed the effects of teaching the strategy by counting the number of ideas on students' plans and comparing them to the number of ideas included in the actual essays. Raters assigned the essays a score for quality by using a holistic rubric. The results of the study showed that students' writing significantly improved. The amount of time spent writing increased for several students, the quality of their essays doubled and a majority of students adhered to the topic. When examining the written plans generated by the students, De La Paz (1997) also found that students used key words and self-monitoring questions such as "Did I star ideas for both sides?" and "Can I think of anything else?" on the side of their written plans (p. 230). De La Paz's (1997) findings support how combining aspects of SRSD with explicit instruction of planning strategies can facilitate students' ability to produce more coherent and qualitatively better essays.

Explicit instruction of planning has also shown promising results for middle and high school students. Similar to De La Paz (2007), Chalk and colleagues (2005) assessed explicit modeling of planning with tenth-grade students with learning disabilities through



a single-subject design study. When stating the significance of the study, the researchers point out that there is a relatively small body of literature focused on teaching high school students pre-writing strategies (Chalk et al., 2005). Using convenience sampling, fifteen students who were identified as having learning disabilities were selected to participate. The lead author of the study used direct instruction to model brainstorming strategies prior to writing. Participants' essays were scored by two raters for fluency and overall quality based on a writing rubric that assessed four domains: (a) focus and development, (b) organization, (c) fluency, and (d) conventions. The results of the study showed that the most prominent gains were made in compositional fluency. Chalk and colleagues (2005) posited that the gains observed were the result of explicit instruction of brainstorming strategies. Lastly, it is interesting to note that the researchers called for future studies that isolate the effects of specific variables in planning such as semantic webbing or outlining.

### **Technology for Planning**

With the advent of technology and software programs for writing, more and more students are being asked to plan on computers (Torrance, 2016; Unzueta, 2009). Technological advancements of computers have facilitated teacher modeling of planning instruction. Specifically, projectors, document cameras, and whiteboards provide students with the ability to see their work as they plan, and allows for whole-class discussion and revision (Kajder, 2005; Unzueta, 2009). Computer software programs can generate digital-based graphic organizers, which enable students to design and edit visual representations of information in alternate forms (Strangman et al., 2003). Apps such as Inspiration, Kidspiration and Prezi afford students the opportunity to flip between a web

and outline format with a click of a button (McKeown & FitzPatrick, 2018). Once a student has designed their graphic organizer or concept map, they can easily change it to an outline where they can reorganize information and then transfer it to a word processing program where they can begin to draft their writing. While more and more students are using technological platforms to plan, there are a limited number of studies that have compared computer-based planning with handwritten planning, and in those that have, the results indicated a modest improvement in the overall quality of student writing (Blair et al., 2002; Lin et al., 2004)

During a one-month summer remedial program, Blair and colleagues (2002) examined the impact of “Inspiration,” a computer software program that helps students virtually organize their ideas, with twenty-four seventh and eighth grade students with mild learning disabilities. At the beginning of the study, the majority of students were reluctant to write at all. Throughout the month-long program, they were taught a story webbing strategy using “Inspiration’s” software, and their writing was tracked daily. At the end of the program, the researchers reviewed the data and found that more students planned before writing, increased their keyboarding skills, and produced a slightly longer written product (Blair et al., 2002). However, the researchers found a modest increase in the quality of writing, and posited that one-month was not enough time to see a significant improvement in the actual quality of the students’ writing. Similarly, Lin and colleagues (2004) investigated the use of handwritten and computer-based graphic organizers as a pre-writing strategy for persuasive writing with 226 general education students by comparing two groups of students- one that used a handwriting plan and one who used “Inspiration.” Both groups received the exact same instruction in writing and

planning. The writing assessments were assessed using a 5-point scoring rubric. The study found that students who used the digital graphic organizers generated more ideas than the handwriting organizer group. However, when looking at the actual work, the students who used the handwriting graphic organizer received better scores on their writing. Together, both studies indicate the need for further investigation of the effects digital planning tools have on student writing performance.

### **Students' Perceptions of the Planning Process**

Almost every study about planning before writing discussed in this chapter includes a section related to students' perceptions on the usefulness of pre-writing strategies. Through a combination of pre and post questionnaires, classroom observations and semi-structured interviews, researchers have gained critical insight into students' experiences with the writing process (Graham & Harris, 1989b; Johnson et al., 2003; Lee & Tan, 2010). Several studies discovered a connection between students' knowledge of planning and their perceptions on writing. For example, Morris (2007) noted that students who did not understand the purpose of pre-writing tended to rush to complete writing assignments because they did not see the relevance of the pre-writing stage. Similarly, in Lee & Tan's (2010) study mentioned earlier in this chapter, novice students in a focus group discussion mentioned feeling overwhelmed by the writing process before learning how to use the graphic organizers. However, the students did express feeling more confident with the writing process after planning with the graphic organizers because they afforded them the opportunity to visualize and re-group their ideas (Lee & Tan, 2010). One unanticipated finding was that students reported feeling that they needed more direct teacher modeling in how to use the graphic organizers for planning, which supports

conclusions from prior research on explicit instruction and planning (De La Paz, 1997; Chalk et al., 2005).

In a seminal study by Graham and Harris (1989b), sixth-grade students with learning disabilities were taught the mnemonic TREE to help them memorize the steps for producing a persuasive essay. The strategy prompted students to provide a *Topic* sentence, provide *Reasons* for their opinion, *Examine* the reason from the audience's perspective, and provide an *Ending* (McKeown & FitzPatrick, 2018). The TREE strategy had a positive effect on students' persuasive essays. Before learning the strategy, only a few students' essays included components of persuasive writing. However, after instruction, nearly all of the students' essays marked improvement. Based on student interviews, students perceived that the strategy was the reason their writing scores improved. For instance, each student reported that "they believed the strategy helped them to write better" (Graham & Harris, 1989b, p. 213). Furthermore, students said that the TREE strategy helped them organize their ideas and made writing easier. In fact, some even mentioned that their friends should learn the strategy to become better writers.

In an effort to learn more about the link between metacognitive learning strategies and ELL students' attitudes towards using them in writing, Al-Jarrah, Mansor, Ab Rashid, Bashir and Al-Harrah's (2018) conducted in-depth interviews with ten secondary ELL students who were part of an experimental group that received instruction on planning strategies including brainstorming, underlining, and sequencing information. Findings in Al-Jarrah and colleagues (2018) study are consistent with Lee and Tan's (2010) and Graham and Harris' (1989b) results. Prior to instruction, participant A reported having difficulty arranging his ideas, and stated that he would easily stray off

topic. Other students commented that time management is the most overwhelming issue they face when writing. After the post intervention, the majority of students interviewed expressed that learning planning strategies helped improve their writing performance, including participant A, who said planning strategies helped them organize ideas and focus on the paragraph's topic. However, it is important to note that some of the students indicated that they needed more training on how to use brainstorming techniques for writing. Overall, Al-Jarrah and colleagues' (2018) interviews provide deeper insight about the writing difficulties students face, as well as the strategies they find most helpful.

### **Literature Review Summary**

In all of the literature reviewed in this chapter, planning has been recognized as a critical component of the writing process. Collectively, the evidence presented in this section indicates that there is a relationship between planning before writing and improvements in the quality of student writing. One possible explanation for these findings is that planning has been identified as one of the best ways to reduce cognitive capacity limitations (Hayes & Flower, 1980). Furthermore, planning strategies enable novice writers to devote more of their cognitive resources on language production (Fayol et al., 2012). In several studies reviewed in this chapter, researchers have noted that planning with visual organizers can facilitate the cognitive needs of novice writers by enabling them to view their ideas on paper. Because my proposed study seeks to explore if the type of plan students use affects the quality of their writing, studies related to concept maps and outlines were discussed. While both formats proved to help improve students' ability to generate more ideas prior to writing, outlining resulted in better writing performance (Galbraith & Torrance, 2004; Kellogg, 1990). As discussed in the

theoretical framework section in chapter one, using routine plans have been found to reduce some of the cognitive burden of writing because students can potentially retrieve the structure or format from long term memory (Deane et al., 2008; Kellogg, 2001; Rijlaarsdam et al., 2003; Torrance, 2016). Kirkpatrick and Klein's (2009) study on text structures and linear planning strengthens that idea since students were able to replicate an IPAN table on scrap paper during the post-test. Therefore, Kirkpatrick and Klein (2009) posit that the linear structure of the plan may have contributed in the students' ability to retrieve it from memory.

The results of the research also highlight the importance of explicit instruction of planning. McKeown & FitzPatrick (2018) posit that if teachers provide direct, explicit instruction in self-regulation strategies such as planning, students' writing skills will improve. In interviews aimed at learning more about the students' experience with the planning process, an interesting theme emerged about instruction around planning tools. In particular, several students expressed needing direct teacher modeling on the training tool (Graham & Harris, 1989b; Lee & Tan, 2010; Ojima's, 2006). While technological tools such as smart boards and document cameras can enhance teacher modeling because students can visually see the plans being generated, further investigation is needed on using apps and software as planning programs (Blair et al., 2002; Lin et.al, 2004).

Lastly, authors of several of the studies reviewed called for more research isolating the effects of specific planning formats (Al-Jarrah et al., 2018; Lee & Tan, 2010; Ojima, 2006; McKeown & FitzPatrick, 2018).

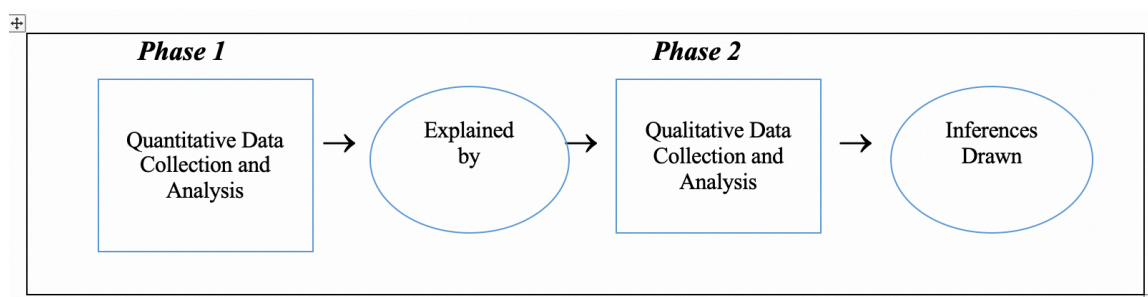
## CHAPTER 3: METHODS AND PROCEDURES

### Research Design

The present study employed an explanatory sequential mixed methods design to examine the impact of using specific planning formats on student writing. The data collection and analysis occurred over two distinct phases: quantitative followed by qualitative. The rationale for using this approach is that quantitative data and their subsequent analysis provide a general understanding of the topic of study. The qualitative data and their analysis refine and explain those results by exploring the participants' view in greater depth (Creswell, 2018). As seen in Figure 6, by bringing both quantitative and qualitative data together in one study, and intentionally integrating the data, the researcher can access knowledge, and insight, which can result in drawing inferences that may not occur if a quantitative or qualitative study is undertaken independently (Terrell, 2016).

**Figure 6**

#### *Two-Phase Explanatory Sequential Design*



*Figure 6. Note.* This graphic provides a simple diagram of the procedures in the two-phase explanatory sequential design. Reprinted from *A concise introduction to mixed*

*methods research* (p. 39), by J.W. Creswell, 2015, Sage Publishing, Inc. Copyright 2015 by Sage Publishing, Inc.

The research questions that guided this study include:

### **Research Questions**

- 1) Do seventh and eighth-grade students that use a Single-Paragraph Outline (SPO) before writing a paragraph earn a higher scaled range score on their pre-and post-writing assessments than students who use a concept map and students who do not use a planning tool?
- 2) What are the seventh and eighth-grade students' perceptions of the planning tool they used to write their post-writing assessment?

### **Hypothesis**

$H_0$ : There will be no statistically significant difference in the pre-and post-writing assessment scaled scores of seventh and eighth-grade students who use an SPO before writing a paragraph, students who use a concept map before writing a paragraph and students who do not use any planning tool.

### **Research Sites**

The target population for this study was drawn from 702 seventh and eighth-grade students in seven middle schools within two districts in Louisiana, District A and District B. Pseudonyms are used throughout this study to ensure the confidentiality of both research sites and participants. Participating schools were from a mix of urban, suburban, and rural settings. Table 1 shows the demographic information of both districts (Louisiana Department of Education, 2021).



**Table 1***Demographic Information*

<i>District A</i>	<i>District B</i>
<ul style="list-style-type: none"> <li>• <b>Total school enrollment</b> = 8,154</li> <li>• <b>Students by Race/Ethnicity:</b> <ul style="list-style-type: none"> <li>○ African American (84.8%)</li> <li>○ White (12.7%)</li> <li>○ Hispanic (1.3%)</li> <li>○ Asian (1.0%)</li> <li>○ Native American/Alaskan American (0.1%)</li> <li>○ Hawaiian/Pacific Islander (0.1%)</li> </ul> </li> <li>• <b>English Proficiency</b> <ul style="list-style-type: none"> <li>○ Full English Proficient (99.08%)</li> <li>○ Limited English Proficiency (0.92%)</li> </ul> </li> <li>• <b>Economically Disadvantaged</b> <ul style="list-style-type: none"> <li>○ (85.32%)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Total school enrollment</b> = 22,417</li> <li>• <b>Students by Race/Ethnicity:</b> <ul style="list-style-type: none"> <li>○ White (57%)</li> <li>○ African American (29%)</li> <li>○ Hispanic (9%)</li> <li>○ Asian (3.0%)</li> <li>○ Native American/Alaskan American (0.1%)</li> <li>○ Hawaiian/Pacific Islander (0.1%)</li> </ul> </li> <li>• <b>English Proficiency</b> <ul style="list-style-type: none"> <li>○ Full English Proficient (96.18%)</li> <li>○ Limited English Proficiency (3.82%)</li> </ul> </li> <li>• <b>Economically Disadvantaged</b> <ul style="list-style-type: none"> <li>○ (53.67%)</li> </ul> </li> </ul>

I selected these sites to conduct my study for several reasons. First, I had a close working relationship with the leaders and educators from both districts. Despite the COVID-19 pandemic, both district superintendents approved the present study, and appointed an on-site coordinator from each middle school to assist me with conducting the study remotely. One of my research goals was to assess the impact of using specific planning tools on students' writing performance. Therefore, I set out to examine student writing samples from students who had experience with using the SPO for pre-planning. All of the participating middle schools in District A and B had teachers trained in using the Hochman Method; thus, they were familiar with the SPO. In addition, there were also teachers who were new to the district or had never received Hochman Method training,

which allowed for control groups. Both districts use the state's English Language Arts (ELA) curriculum, so students had access to similar texts and resources. Lastly, both districts used blended models of in-person and remote learning. By selecting participants from in-person classrooms, I could examine the impact of students planning by hand, which was one of the specific objectives of this study.

### **Sampling and Participants**

In the present study, I utilized purposive sampling to select the participants. Purposive sampling enables a researcher to identify and select groups of individuals that share specific characteristics or experiences that are related to the phenomenon of interest (Creswell & Plano Clark, 2007; Patton, 1990). In order to select participants for the study, I established the following eligibility criteria for the on-site coordinators to use when selecting samples: (a) in-person students only (b) students in classrooms that had ELA teachers who were rated effective on their 2018-2019 state performance reviews, the most recent review due to the lack of state testing during the pandemic, and (c) classes comprised of students with similar proficiency levels in writing on their state ELA exams. When first meeting with district leaders, I requested examining eighth-grade students' writing samples for my research. However, the district leaders suggested expanding the number of participants to include both seventh and eighth-grade students due to the uncertainties around continued in-person classes during the pandemic. The districts leaders explained that based on the most recent state ELA exam scores, seventh and eighth-grade students had similar writing proficiency levels. Therefore, for the purposes of this study, the seventh and eighth-grade students' samples were viewed as one cohort of participants.

This study was designed to assess the impact of planning with three different conditions: Group A (SPO), Group B (Concept Map), and Group C (Scratch). The primary factor in assigning the conditions was the ELA classroom teachers' experience with using the Hochman Method and the SPO. Group A consisted of students who had ELA teachers that were fully trained in the method and used the SPO regularly in their classrooms. Group B was comprised of students in ELA classes with teachers who had little or no training in the Hochman Method. Instead of using the SPO with their students, school leaders observed the teachers using the graphic organizers provided in the state's ELA curriculum. Lastly, Group C contained students in ELA classes with teachers who received full training in the Hochman Method, as well as teachers who received little or no training.

### **Phase 1: Procedures and Instruments for Quantitative Data Collection (Pre-Assessments)**

At the beginning of Phase 1, I shared a password protected Google Drive folder with the on-site coordinators. The folder included the pre-and post-assessments, post-assessment questionnaires, and a checklist of instructions. Because of COVID-19 travel restrictions, I was unable to travel to Louisiana to meet with the teachers face to face, so I created a brief video tutorial to guide them through the steps of the study. Given that the study's timeline could be affected by classrooms needing to transition to remote learning due to the pandemic, the on-site coordinators requested a two-week window to administer the assessments. Therefore, the teachers administered the pre-assessments from September 12, 2020 through September 21, 2020.

For the purposes of this study, it was essential to have a baseline measurement of students' writing skills. Therefore, seventh and eighth-grade students in Groups A, B, and C, were given an expository writing prompt directing them to write a paragraph about a character from a book, short story, or play, and explain how that character changes in the story (see Appendix A for the pre-assessment). Students were required to complete the pre-assessment in a single-class ELA period, which is approximately forty-five minutes in all seven middle schools. Because the study was administered to in-person students, teachers distributed the assessments and a piece of scratch paper in case students wanted to jot down their ideas on paper (see Appendix E for scratch paper). To protect the privacy of the participants, the on-site coordinators created group rosters with candidate codes for each student and uploaded them to the shared Google Drive folder. For the purposes of matching students' pre- and post-assessments, students were asked to write their candidate codes, which their teachers provided them, on all documents. From September 23, 2020 to October 12, 2020, the on-site coordinators scanned the pre-assessments and scratch paper to a shared Google Drive folder. In total, the districts uploaded 702 pre-assessments and 126 scratch paper samples.

### **Phase 1: Using Comparative Judgment for Quantitative Data Analysis**

At the end of Phase I, teachers from across all of the middle-schools assessed the seventh and eighth-grade students' pre-assessments by using comparative judgment on an online software platform developed by an organization based in the UK known as No More Marking (NMM). Rubrics are the most commonly used tools to assess writing (Kohn, 2006; McKeown & FitzPatrick, 2018). However, using rubrics to assess writing presents challenges that have proved difficult to resolve, especially in the area of

reliability and validity because the scores rely heavily on subjective personal preferences about quality (Kohn, 2006; Meadows & Billington, 2005). Several researchers have reported on the limitations in scoring reliability of extended written responses (Meadows & Billington, 2005; Murphy, 1982; Ofqual, 2018c). In England, He, Anwyll, Glanville, and Deavall (2013) examined the reliability and validity of eleven-year-old students' writing responses that were scored on a detailed rubric by experienced teachers. Despite extensive training, monitoring and standardization, the students' writing scores were found to vary substantially.

Kohn (2006) posits that assessing writing through the use of rubrics can be problematic because rubrics are designed to function as scoring guidelines, but often serve as arbiters of quality and agents of control over what is taught and valued. Because it is easier for scorers to agree on spelling, punctuation and other specific written conventions outlined in a writing rubric, classroom instruction may be distorted to focus heavily on what is being assessed (Meadows & Billington, 2005). In an attempt to address the inconsistency in grading, the Department of Education in England changed the rubrics used to assess eleven-year-old students by including more precise language such as statements on using hyphens, fronted adverbial phrases, etc. (Anwyll et al., 2013). As a result, the specificity of the language in the rubric led to greater problems with validity, and the shifts in formality caused teachers to coach students to include those devices in their writing. As evidenced in several of the writing samples, most students did not use the devices appropriately (Anwyll et al., 2013).

Given some of the reliability and validity issues associated with assessing extended writing responses using rubrics, No More Marking developed an online

software that provides educators with an alternative approach to scoring writing with rubrics known as comparative judgement (see Appendix I). Comparative judgement is a process where scorers, or “judges,” read two pieces of writing and make a holistic professional judgement on which piece of writing they think is better (see Figure 7). Each judge makes a series of judgments, and several judges participate in the process. One piece of writing may be judged ten to twenty times. Judges receive an infit score, which reveals if their judgements agreed with the final measurement scale. To ensure judging consistency, the judgments of any judge who completes less than 20 judgments or has an infit score greater than 1.3 are removed from the overall anchoring process (Pollitt, 2012).

**Figure 7**

*Student Writing Samples on the NMM Online Platform*

The comparative judgment process uses a statistical model based on Bradley-Terry-Luce (BTL) model that combines the judgements to place every piece of writing on a consistent measurement scale (Wheadon et al., 2019). Individual teachers in

participating schools make judgements for the students at their school. Every tenth judgment or so that they make is a moderated judgment. A moderated judgement is a judgement made on a pair of assessments from another participating school. Teachers may also make judgments on previously judged anchor assessments. The moderated judgments coupled with anchor paper judgements helps to maintain the consistency in the allocation of scale scores based on the judgements made across different schools (Wheadon et al., 2019).

In March 2020, No More Marking, in coordination with a researcher from the Statistics and Assessment Research Department at the University of Oxford, conducted a study with nine schools to compare the reliability, efficiency, and validity of comparative judgement with the Teacher Assessment Framework (TAF), a rubric commonly used to assess writing in the UK. Teachers scored 349 Year 6 (5<sup>th</sup> grade) students' writing samples using both TAF and comparative judgment. The overall findings showed that: (a) comparative judgment reduced the frequency of errors and inconsistencies in scoring as compared to TAF, (b) comparative judgement achieved a similar level of reliability to the TAF in half the time, and (c) teachers rewarded a largely similar construct when assessing with comparative judgment or the TAF (Wheadon et al., 2019).

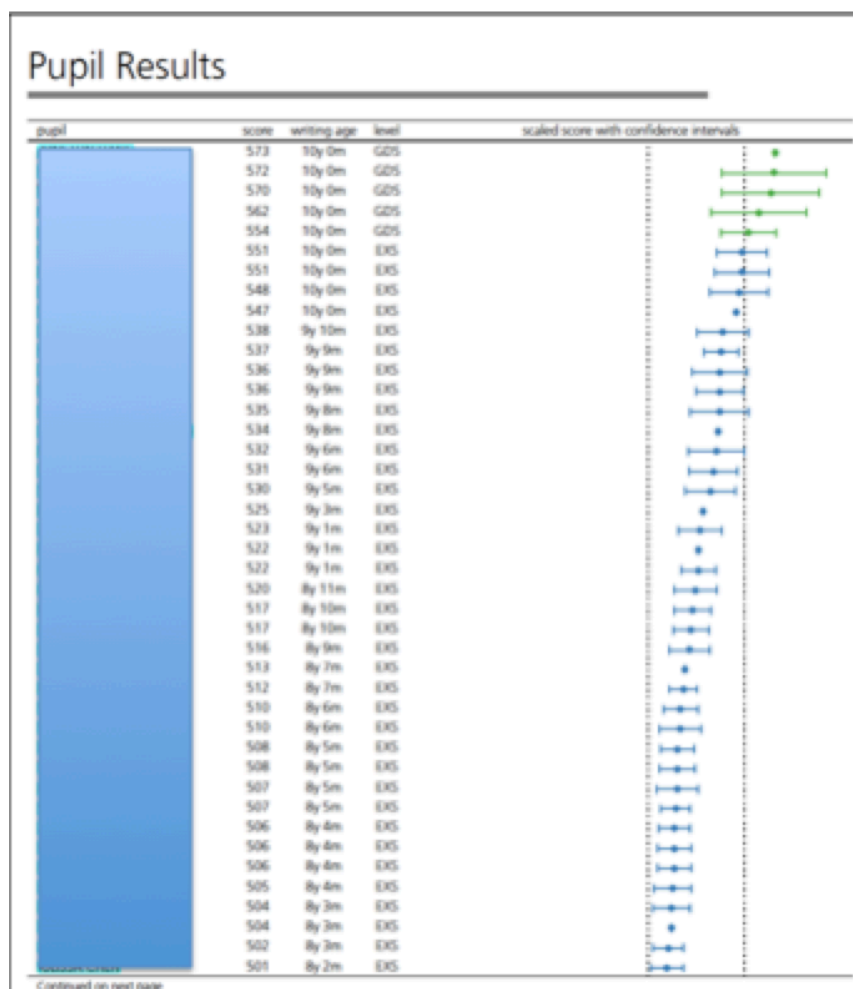
In addition to the increased reliability, efficiency and validity of comparative judgment, there were several reasons why I decided to use NMM for assessing the student writing samples in this study. First, several of the schools within District A and B had previously used the NMM platform to assess student writing in their schools, so they were familiar with the judging process. Second, the NMM software is designed to remove student identifiers from the judges' computer screens, ensuring the anonymity of

the student work and limiting potential judging bias. Third, instead of independent scorers or outside consultants assessing the samples, the NMM platform allows school leaders and teachers to be part of the assessment process by judging their own students' writing. As teachers are judging the student work, they often record patterns and trends they are observing. For example, teachers may notice that several students are not writing topic sentences at the beginning of their paragraphs, which may inform their future classroom writing instruction. Lastly, once the pre- and post-writing assessments are scored, NMM produces a report with the students' scaled score with confidence intervals, which would help me assess if the planning tool had any impact on the students' pre- and post-writing performance (see Figure 8).



**Figure 8**

*Example of Students' Scale Scores in NMM Data Report*



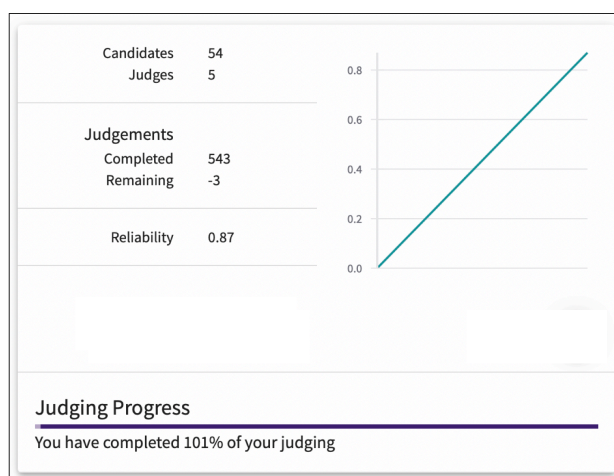
### Phase 1: Quantitative Data Analysis (Pre-Assessments)

During late September through early October 2020, the on-site coordinators scanned and uploaded the students' pre-assessments to the Google-Drive folder. Then, I uploaded 702 pre-assessments to the No More Marking platform. In late October, NMM released judging links, which were unique links for each school to judge their own student assessments. I shared the links with each of the on-site coordinators via email.

From mid-October to late October 2020, NMM opened the judging window, and 48 teachers across both districts began the judging process. I was able to access NMM as an administrator to view the judging progress, as well as the reliability (see Figure 9). NMM defines reliability as a number that represents the degree to which different judges agree in their decisions. Reliability is measured on a scale of 0-1. With comparative judgment, a reliability of at least .65 is acceptable, while a reliability of .80 is preferred (Wheadon et al., 2019). Typically, the reliability increases as more judges make judgements.

**Figure 9**

*NMM Administrative Report on a School's Judging Progress*


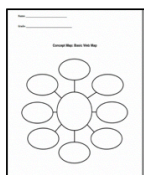



In the last week of October, NMM released the pre-assessment scaled student writing scores, which served as a baseline writing measurement of students' writing proficiency. A review of the scaled scores revealed the students' writing skills were similar across schools and districts. At the same time the pre-assessment data was released, the schools began to administer the post-assessment.

## **Phase 2: Procedures and Instruments for Quantitative Data Collection (Post-Assessments)**

During the week of October 26, 2020, teachers began to administer the post-writing assessments. Teachers asked students to write a paragraph in response to the following expository writing prompt: Choose a character from a book, short story or play, and write a paragraph about a problem the character experiences and how they tried to fix that problem. The prompt was slightly changed from the pre-assessment prompt to prevent students from feeling like they were repeating the same exact task, or inadvertently making them feel like they had to try and remember what they wrote for the pre-assessment (see Appendix B for the post-assessment). As seen in Table 2, for the post-assessment, Groups A, B and C were each assigned a different condition. Teachers directed students in Group A to plan their post-assessment paragraph using the Single-Paragraph Outline, teachers directed students in Group B to plan their post-assessment paragraph using the Concept Map, and teachers directed students in Group C to write their post-assessment paragraph without an assigned planning tool. However, teachers did provide Group C with a piece of scratch paper and told students that they could use it if they chose to do so. Teachers did not coach students in Group C into using a specific format on the scratch paper.

**Table 2***Post-Assessment Assigned Conditions*

<i><b>Groups</b></i>	<i><b>Condition</b></i>
A	Post-assessment & SPO 
B	Post-assessment & Concept Map 
C	Post-assessment & Scratch Paper 

**Phase 2: Procedures and Instruments for Qualitative Data Collection**

The present study was designed to assess the impact specific planning tools have on students' writing performance. The study also sought to address the research question, *“What are the seventh and eighth-grade students' perceptions of the planning tool they used to write their post-writing assessment?”* Creswell and Plano Clark (2010) contend that mixed methods designs characteristically integrate methods that are not normally used together, such as embedding open-ended questions within Likert scale instruments. In order to gain insights into students' perceptions of the SPO and the concept map, I designed a brief questionnaire for teachers to distribute to students in Group A and Group

B after they completed their post-assessment (see Appendix F). Students in both groups received the same questionnaire.

To ensure that students would properly identify their formerly-used tool, I included a small graphic of both the SPO and the Concept Map as a visual reminder at the top of the document.

Teachers directed students to rate if they 1:Strongly Agree, 2:Agree, 3:Neither Agree nor Disagree, 4:Disagree, or 5:Strongly Disagree with the following three statements: (a) *The planning tool helped me organize my ideas.* (b) *The planning tool made it easier for me to write my paragraph.* (c) *I would use this planning tool to plan a paragraph again.* Likert-type scales allow for degrees of opinion, which can be helpful in gaining insight into a phenomenon (Koskey, 2016). However, by only focusing one form of questioning a researcher may not obtain the full potential of the survey (McLeod, 2019). To compliment the Likert-type scale statements, I included one open-ended question, which provided students with a space to share any additional comments about the planning tool. In addition to learning the percentages of how students rated the statements, reviewing the students' open-ended responses helped me obtain a deeper understanding of students' thoughts on the tool, and it provided me with the opportunity to discover information that I may have otherwise missed.

## **Phase 2: Quantitative Data Collection (Post-Assessments)**

Throughout the week of November 18, 2020, on-site coordinators began the progress of scanning and uploading the post-assessments, planning tools or scratch paper (if used), and student questionnaires to the Google Drive folder. Table 3 provides the total numbers of pre-and post-assessments and post-assessments questionnaires collected.

**Table 3**

*Total Numbers of Pre-and-Post Assessments and Post-Assessment Questionnaires Collected*

Pre-Assessments	Post-Assessments	Post-Assessment Questionnaires
702	381	130 (Group A)
		100 (Group B)

The on-site coordinators uploaded 381 post-assessments, which was a decrease from the pre-assessment numbers. As predicted, several classes had to quarantine and transition back to remote learning due to increased COVID-19 cases in their schools. As previously mentioned, the focus of this study was on in-person students' writing. Consequently, when students transitioned back to remote learning, they were no longer able to submit hand-written outlines, concept maps, scratch paper, etc. On-site coordinators uploaded 230 questionnaires to the shared Google Drive: 130 from Group A (SPO) and 100 from Group B (Concept Map). Similar to the decrease in the post-assessments, the on-site coordinators associated the lower questionnaire numbers with students having to transition to remote learning.

In early December, after I uploaded the post-assessments to the NMM platform, I emailed the on-site coordinators their unique judging links to assess their own students' post-writing assessments. Upon returning from winter break, 38 teachers judged the post-assessments. In total, 86 teachers made multiple judgements on their students' pre-and post-assessments (Table 4). Based on the number of judgments, NMM's platform reported that each students' pre-and post-writing assessment was read at least ten times

by several different judges. As a result, the overall reliability scores surpassed the .80 preferred reliability.

**Table 4**

*Overall Numbers of Pre-and Post-assessments Judgments and Reliability Scores per School*

School	Total # of judges for pre-and post-assessments	Total # of judgements of pre-and post-assessments	Overall reliability scores
A	15	1,994	.92
B	10	1,446	.87
C	11	1,311	.87
D	17	2,660	.86
E	10	550	.89
F	16	2,147	.89
H	7	250	.90

## **Phase 2: Quantitative Data Analysis (Pre-and Post-Assessments)**

In early January 2021, NMM released the scaled scores of all 381 post-assessment writing samples. In total, 339 students completed the pre-and post- assessments and were successfully matched between the assessment sessions. For data cleaning purposes, I scanned the assessments visually to ensure that there were no blank or illegible submissions. I discovered 5 assessments that were illegible, 2 assessments that appeared to be false matches as their handwriting did not match, and 1 assessment for plagiarism. Before removing the assessments from the data analysis, I contacted the students' on-site coordinator to review the assessments in question, and they confirmed the discrepancies. Then, I undertook the following analysis with the remaining 331 students. I inputted the

revised matched data file from NMM into IBM SPSS and ran descriptive statistics to determine if there was a change in the mean scores of the pre-and-post assessments. Additionally, I conducted a within subjects t-test to determine if the changes in pre-and post-assessment scaled scores were statistically significant. To ensure that the removal of assessments did not bias the analysis, I repeated the analysis with the original 339 students and found no material difference in the results.

### **Phase 2: Qualitative Data Analysis (Post-Assessment Questionnaires)**

Prior to analyzing the post-assessment questionnaires, I removed blank and illegible questionnaires. I generated an Excel spreadsheet to input each students' Likert-scale ratings, as well open-ended comments. Because the Likert scale data is ordinal in nature, I inputted the data into SPSS and ran descriptive statistics to calculate frequency distributions (Urdan, 2010). For the purposes of this study, I used Hypothesis Coding, the application on a researcher-generated, predetermined list of codes, onto qualitative data that is intended to help the researcher assess a hypothesis (Saldaña, 2012). In advance of reviewing the data, the researcher develops codes from a theory or prediction about what will be found in the data before the data has been collected or analyzed. Ethnographer Martin Hammersley (1992) admits:

“...we cannot but rely on constructing hypotheses, assessing them against experiences and modifying them where necessary, [even when we] adopt a more informal and broader approach in which we sacrifice some of the sharpness of the test in order to allow more of our assumptions to be thrown open to challenge” (p. 169).



DeCuir-Gunby, Marshall, and McCulloch (2011) suggest that the development of predetermined theory-driven codes in addition to data-driven codes is an effective strategy for codebook development. Bernard (2006) notes that Hypothesis Coding is a strategic choice for a study that is extremely focused or narrow in focus. Saldaña (2012) posits that even if a researcher discovers that their proposed hypothesis is disconfirmed through discrepant cases or statistical analysis, that is a benefit in itself because it forces the researcher to look deeper at the data, thus leading to more trustworthy findings.

### **Theoretical Framework and Hypothesis Coding**

The theoretical framework can help to inform the researcher's Hypothesis Codes (Bernard, 2006). The cognitive processing theory undergirds this present study. Because writing can impose a heavy burden on working memory, planning extensively before writing can alleviate the cognitive load, improve the fluency of language production, and enhance the overall quality of the final product (Kellogg, 1990). Visual organizers can fulfill the cognitive needs of novice writers by enabling them to view the relationship between their ideas and concepts (Lee & Tan, 2010). Specifically, outlines can help students organize their thoughts, which can result in students' feeling less overwhelmed and more motivated to write (Becker, 2006). Existing research on the cognitive processes and planning before writing helped to inform my Hypothesis Codes (see Table 5). As I reviewed students' open-ended comments, I annotated the data by noting the code number(s) I considered to be applicable (see Table 6).

**Table 5**

*Example of some of the Hypothesis Codes used for Open-Ended Responses Analysis*

Hypothesis Codes
<sup>1</sup> . ORGANIZED IDEAS
<sup>2</sup> . EASIER TO WRITE
<sup>3</sup> . IMPROVES WRITING
<sup>4</sup> . ENJOYABLE
<sup>5</sup> . INCREASED CONFIDENCE

**Table 6**

*Code Example Of Open-Ended Responses on Questionnaire*

Open-ended responses	CODE
<p>Student A: <sup>1/2</sup>. This planning tool (SPO) helped me <b>organize my ideas</b>, it made it <b>easier for me to write my paragraph</b> and it helped me know how to start my paragraph.</p> <p>Student B: <sup>1</sup>. the planning tool (SPO) helped me <b>keep up with my thoughts</b>.</p>	<sup>1</sup> . ORGANIZED IDEAS
<p>Student F: <sup>2</sup>. the concept map <b>made it easier for me write the paragraph</b>; I really liked it.</p> <p>Student D: <sup>2</sup>. This (SPO) <b>helped me make my paragraph</b> - it made it <b>easier for me to write</b> a paragraph.</p> <p>Student B: <sup>2</sup>. I felt like this (SPO) <b>process made it easier for me</b> to understand more what to do.</p>	<sup>2</sup> . EASIER TO WRITE

In reviewing the responses, I discovered that students addressed themes that I did not anticipate. For example, one student from Group B (Concept Map) wrote, “try

labeling it?” Another student from Group A (SPO) wrote, “it should have more lines cause I like to write and explain things.” Interestingly, I did not anticipate that students would give specific feedback on the format of the tool. As a result, I added **FORMATTING** as a code.

## **Phase 2: Qualitative Data Collection (Student Interviews)**

As Morse (2003) maintains, key informants need to be carefully chosen since they hold special knowledge that can assist the researcher in gaining important insights into the phenomenon under study. In a similar vein, Patton (1990) notes that studying information-rich cases yields an in-depth understanding of the topic of study. In order to recruit interviewees who would provide rich information, I employed criterion sampling, a purposive sampling strategy that enables the researcher to select participants who meet a pre-determined criteria of importance (Creswell & Plano Clark, 2010). In criterion sampling, researchers pursue finding participants who have had a shared experience, but vary in their individual perceptions of that experience (Morse, 2003). Lastly, criteria sampling can provide an important qualitative component to quantitative data, which is useful in mixed methods research studies (Creswell & Plano Clark, 2010; Morse, 2003).

I established the following criteria for selecting interviewees: (a) students had a matched pre-and post-assessment scaled writing score, (b) wrote an extended open-ended response that explained their perception of the planning tool, and (c) their scaled writing score changed (either increased or decreased from the pre-assessment to the post-assessment). I also wanted to interview a mixture of students who either reported that the tool helped or did not help them plan their writing. By creating a chart with the available

student data, I was able to apply the criteria and narrow down the selection of interviewees (see Table 7).

**Table 7**

*Example of Criteria Chart for Selecting Interviewees*

Candidate Code	Condition	Pre-Score	Post-Score	Change (+/-)	S1	S2	S3	Open-Ended Response
A1	Group A	368	375	+7	SA	SA	A	<sup>1</sup> It made it easier to organize my thoughts on paper
B1	Group B	370	373	+3	A	A	A	<sup>1</sup> It helped me brainstorm my ideas about a character
C1	Group C	344	339	-5	N/A	N/A	N/A	N/A

N=331

For example, I requested to interview one student in Group A (SPO), for the following reasons: (a) the pre-and post-assessment scaled writing score increased from a 358 to a 368 (b) the student circled strongly agree for all three statements regarding the SPO, and (c) the student wrote: “This should be used in each grade to make it easier to write” (see Figure 10).


Figure 10


*Student in Group A's Post-Assessment Questionnaire*

**Student Post-Assessment Questionnaire**

**Part I: Participant Information**  
 Student Name XXXXXXXXXX Grade: 7th

**Part II: Planning Tool**  
 Directions: Please check off the planning tool you used before writing your paragraph.

☒ Single-Paragraph Outline(SPO)  


☐ Concept Map  


Directions: Read each statement and circle the number that best describes your experience using the planning tool.

**1. The planning tool helped me organize my ideas.**

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
5	4	3	2	1

**2. The planning tool made it easier for me to write my paragraph.**

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
5	4	3	2	1

**3. I would use this planning tool to plan a paragraph again.**

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
5	4	3	2	1

**4. If you would like to share any additional comments about this planning tool, please write your comments below.**

This should be used in each grade to make it easier to write

I generated a list of 50 possible interviewees (25 from Group A and 25 from Group B) which I submitted to the on-site coordinators for their review. However, as anticipated, some students were no longer in attendance at the school or transitioned to remote learning. Therefore, the on-site coordinators confirmed 40 of the students on my list as available interviewees. I requested to interview each student individually because I feared that they would not be as comfortable to speak candidly around their peers. Because of the disruptions in classroom instruction during the school year, the school principals did request that the interviews were brief so that students could quickly return

back to their classes. As a result, the on-site coordinators scheduled each student's interview to last for approximately 5-10 minutes. In addition, I collaborated with them on scheduling the dates and times across the schools and also confirmed that the student had a signed parental permission slip to participate in the study. Because I wanted recording capabilities, I provided the Zoom links. All interviews were recorded and saved in a password protected file in Dropbox. As an additional measure, I also recorded the interviews on my iPhone and iPad for backup.

In early January 2021, I commenced semi-structured interviews via Zoom. As Salmons (2015) posits, the first few minutes of an interview are decisive; therefore, it is incumbent on the interviewer to make the interviewee feel at ease before asking them to share their experiences. At the beginning of each interview, I introduced myself and explained that I was conducting research around writing. I reiterated that (a) the Zoom recordings were for research purposes only, (b) the recordings would be deleted, and (c) their identities would be kept confidential. I expressed my interest in hearing their opinions about the planning tool, and I stressed that there were no right or wrong answers. Because students completed their post-assessments in November, I was concerned that too much time had lapsed between the assessments and the interviews. Therefore, to remind the students of the study, I made a PowerPoint presentation recapping the steps and shared my screen on Zoom. Furthermore, I added a screenshot of their post-assessment questionnaire to help them recall their perceptions of the tools (see Figure 11). I was also able to use it as a frame of reference, and direct students back to it when they were reticent to respond.

**Figure 11**

*Researcher (top box in right-hand corner) Conducting Student Interview on Zoom*

The screenshot shows a Zoom window with a document titled "7th grade" open. The document contains a "Part B: Planning Tool" section with instructions and a "Single Paragraph Outline" section. The student has filled out the planning tool with handwritten responses and a paragraph outline.

**7th grade**

**Part B: Planning Tool**  
 Directions: Please check off the planning tool you used before writing your paragraph.

☒ Single Paragraph Outline (SPO) ☐ Graphic Map

Directions: Read each statement and circle the number that best describes your experience using the planning tool.

1. The planning tool helped me organize my ideas.  
 3 1 3 2 1

2. The planning tool made it easier for me to write my paragraph.  
 3 1 3 2 1

3. I would use this planning tool to plan a paragraph again.  
 1 4 3 2 1

4. If you would like to share any additional comments about this planning tool, please write your comments below:  
 I love the (SPO) because it gives me  
 time to write out all my thoughts about how  
 we going to put my words ~~and~~ and definition.

**Single Paragraph Outline**  
 Name \_\_\_\_\_ Date \_\_\_\_\_

TS \_\_\_\_\_  
 \_\_\_\_\_  
 1. \_\_\_\_\_  
 2. \_\_\_\_\_  
 3. \_\_\_\_\_  
 4. \_\_\_\_\_  
 CS \_\_\_\_\_  
 \_\_\_\_\_

During semi-structured interviews, the researcher should not provide a great deal of guidance and avoid influencing the answers to fit a particular point of view (Salmons, 2015). Researchers should plan to ask open and general questions, as well as exploratory probing questions (Moser & Korstjens, 2018; Salmons, 2015). In advance of the interviews, I planned to ask three general questions (1) “Do you typically plan before you write? If so, how?” (2) “Did the planning tool help you write your paragraph? If so, how?” (3) “Would you use the plan again in the future? Why or Why not?” I created a chart with the same Hypothesis Codes that I used to analyze the open-ended responses. If students addressed one of the themes, I jotted down their candidate code in the column for reference. If the student said something I did not anticipate, I also took note in a blank column in the chart.

Salmons (2015) notes that researchers may experience challenges during interviews, such as interviewing participants who have difficulty sharing their real feelings, or interviewing participants who behave differently when they are being observed. Even though I completed all 40 interviews, I was unable to use all of them to

capture data because some interviewees only responded with “Yes, Ma’am” and “No, Ma’am” answers; they also retracted the statements they wrote on their questionnaire. These students were extremely polite, so it appeared to me that they may not have felt comfortable with sharing their true feelings about the tools. In total, I was able to use 37 student interviews- 20 from Group A (SPO) and 17 from Group B (Concept Map).

### **Phase 2: Qualitative Data Analysis (Student Interviews)**

To facilitate analysis of virtual recordings, it is essential that the researcher transcribes the data verbatim so the transcripts are accurate and reflect the interview experience (Moser & Korstjens, 2018). Therefore, I listened to all of the Zoom recordings multiple times to ensure that I captured the interviewees responses accurately. Similar to how I coded the open-ended responses on the questionnaires, I used the same Hypothesis Codes as the lens for analyzing students’ interviews. I color-colored, line by line, the theme(s) students referenced (see Table 5).



**Table 8***Example of Codes from Student Interviews*

Interview Responses	CODE
Student K: <sup>1</sup> It helped <b>break paragraph down into pieces.</b> (SPO)  Student C: <sup>1</sup> It helped me <b>organize my ideas</b> (SPO)  Student D: <sup>1</sup> It helped me <b>figure out how to put my words together</b> (Concept Map)	<sup>1</sup> . ORGANIZED IDEAS
Student P: <sup>2</sup> It made it is <b>a lot easier than planning in my head.</b> (Concept Map)  Student J: <sup>2</sup> It made it <b>easier for me to explain what I was trying</b> to talk about it. (SPO)	<sup>2</sup> . EASIER TO WRITE

## Summary

For this study, I employed an explanatory sequential mixed methods design, an approach that proved appropriate for this study. Creswell (2015) maintains that one of the benefits of this design model lies in the fact that the researcher can examine the results of the first quantitative phase to determine what results need further exploration in the second qualitative phase. In Phase I, I was able to obtain a baseline measure of students' paragraph skills and examine if, and how, they preplanned their writing. In Phase 2, students were assigned to one of three conditions: (a) planning with a linear outline, an SPO, (b) planning with a Concept Map, or (c) students were not given a specific tool, only Scratch paper to use if they chose so. The NMM comparative judging platform provided students' scaled pre-and post-assessment scores, which helped to quantify the progress, if any, students made dependent on which condition they were assigned. By

having students complete a post-assessment questionnaire that combined closed Likert-type scale questions with an open-ended response, I was able to gain a deeper understanding about perceptions of the SPO and the Concept Maps. By using criterion sampling, I was able to select a range of students who had both similar and different experiences using the planning tools. Through my quantitative and qualitative analysis, I was able to confirm some of the themes that I predicted in advance of the study while also gaining new insights and learnings that I did not foresee.

## CHAPTER 4: RESULTS

### Quantitative Results

The first research question in this study sought to determine if seventh and eighth-grade students who used a Single-Paragraph Outline (SPO) before writing a paragraph would earn a higher scaled range score than students who used a concept map, and students who did not use any specific planning tool and were only provided scratch paper. In order to answer that question, I had to compare students' baseline paragraphs (completed without a specific planning tool) to the paragraphs they wrote after they pre-planned using a specific tool (either an SPO or concept map) to determine if a change in writing scores was dependent on their assigned planning tool.

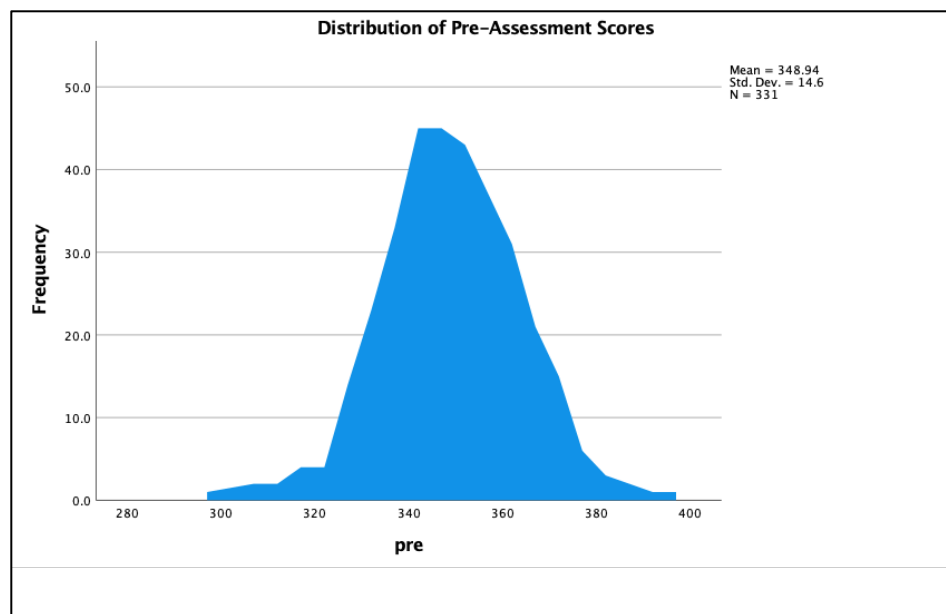
### Descriptive Statistics

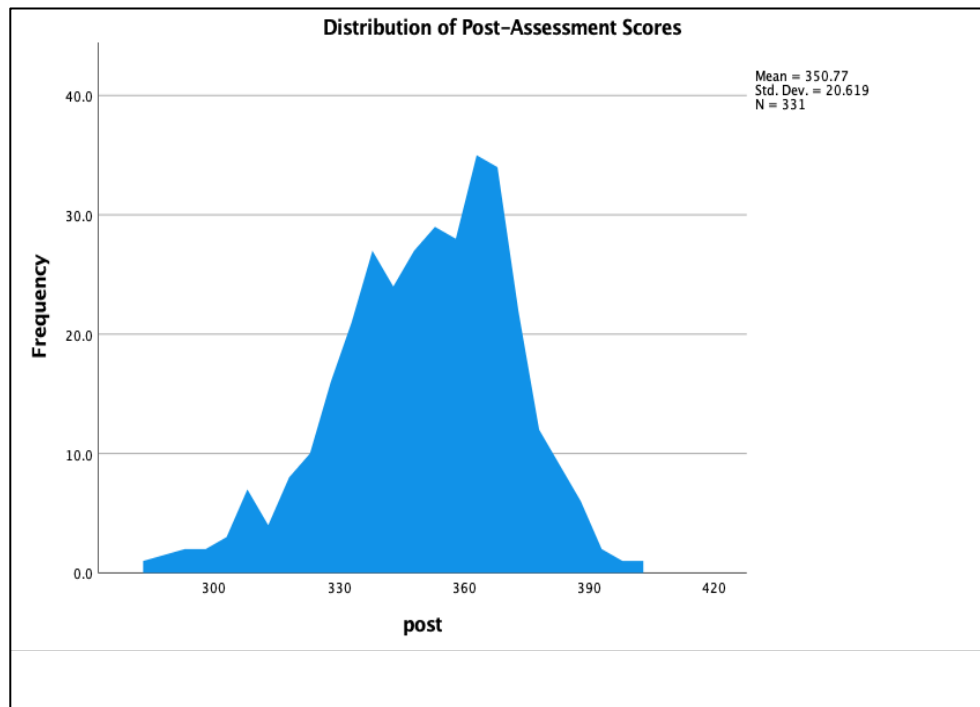
After receiving the matched data file from NMM, I inputted the data into IBM SPSS and ran descriptive statistics (see Table 9). The scores on the pre-assessment ranged from 297 to 396, with a mean of 349. The scores on the post-assessment ranged from 283 to 405, with a mean of 351. As both assessments are on the same scale, the cohort overall showed a 2-point increase. However, some students scored lower on the post-assessment, with some lower scores and a wider range (see Table 9). A within subjects t-test between the pre-assessment and post-assessment scores was not significant, which means we cannot reject the null hypothesis that there was no change in scores between the pre-assessment and post-assessment scaled scores ( $t=-1.387$ ,  $df=330$ ,  $p=.067$ ). However, the difference between the pre-and post-assessments may hide differences between the different planning conditions.

**Table 9***Descriptive Statistics*

Condition	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation	Skewness Stat. Std.	Kurtosis Error Stat.	Std. Error
Pre	99	297	396	348.94	14.600	-.123	.134	.485
Post.	122	283	405	350.77	20.619	-.398	.134	.027
Valid N	N=331							

The scores on both the pre- and post-assessments are relatively normally distributed, although there is a greater degree of negative skew on the post-assessment scores (see Table 9 and Figures 12 and 12.1). The skewness of the post-assessment was -.398 compared to -.123 on the pre-assessment. However, there is no suggestion that a parametric analysis is not suitable for these data.

**Figure 12***Distribution of the Pre-Assessment Scores*

**Figure 12.1***Distribution of the Post-Assessment Scores*

Considering the three conditions, both Group C (Scratch) and Group B (Concept Map) saw a slight decrease in their means, while Group A (SPO) saw an increase in their mean of 5.55 score points. The increase in the range noted above appeared to be due to a wider range of scores in the scratch group on the post assessment. The standard deviation of all groups was similar at the pre-assessment stage, but the standard deviation of Group C (Scratch) and Group A (SPO) groups increased between the pre-and post-assessments (see Table 10 & Figures 12.2 to 12.4).

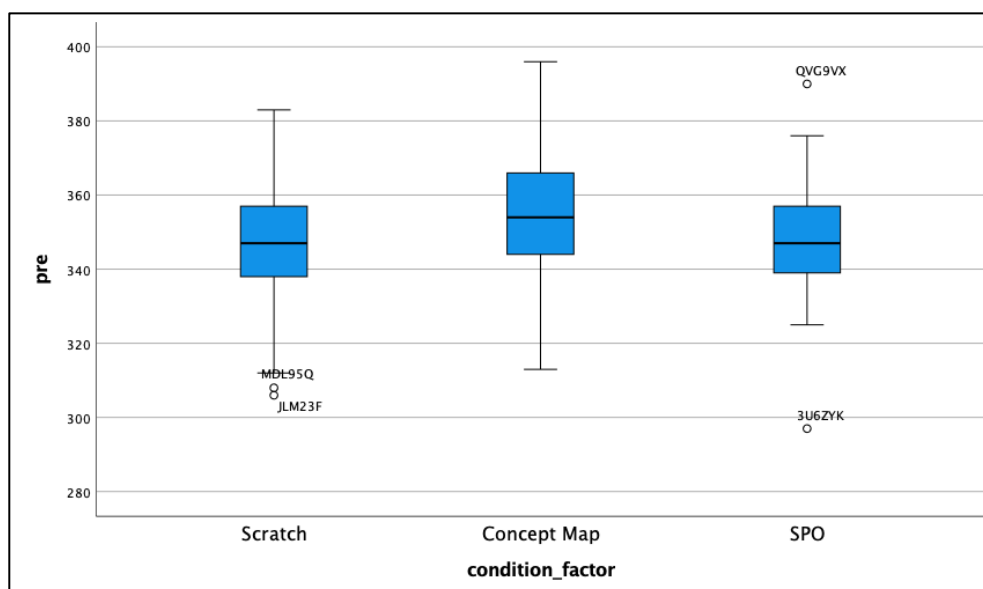
**Table 10***Descriptive Statistics by Condition*

Condition Factor		Pre	Post	Change
Group C (Scratch)	Mean	346.71	345.91	-.80
	N	100	100	100
	Std. Deviation	14.904	24.184	21.100
	Maximum	383	405	53
	Minimum	306	283	-47
	Range	77	122	100
Group B (Concept Map).	Mean	353.32	351.85	-1.47
	N	85	85	85
	Std. Deviation	16.245	16.634	14.304
	Maximum	396	392	37
	Minimum	313	310	-37
	Range	83	82	74
Group A (SPO)	Mean	347.91	353.47	5.55
	N	146	146	146
	Std. Deviation	12.840	19.589	17.329
	Maximum	390	396	57
	Minimum	297	300	-33
	Range	93	96	90
Total	Mean	348.94	350.77	1.83
	N	331	331	331
	St. Deviation	14.600	20.619	18.128
	Maximum	396	405	57
	Minimum	297	283	-47
	Range	99	122	104

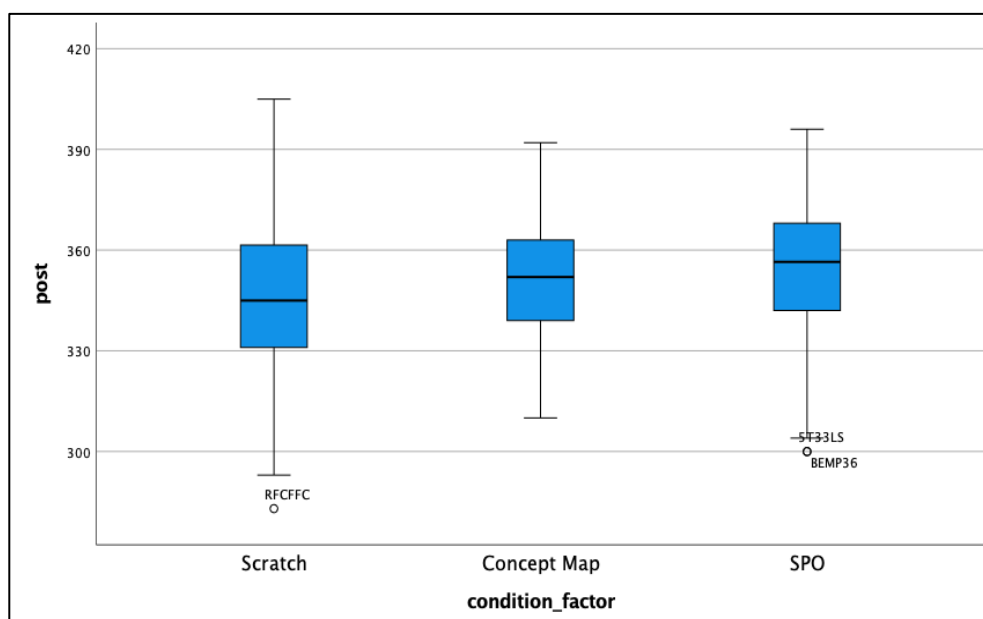
*N= 331*

**Figure 12.2**

*Median and Interquartile Ranges of the Conditions for the Pre-Assessment*

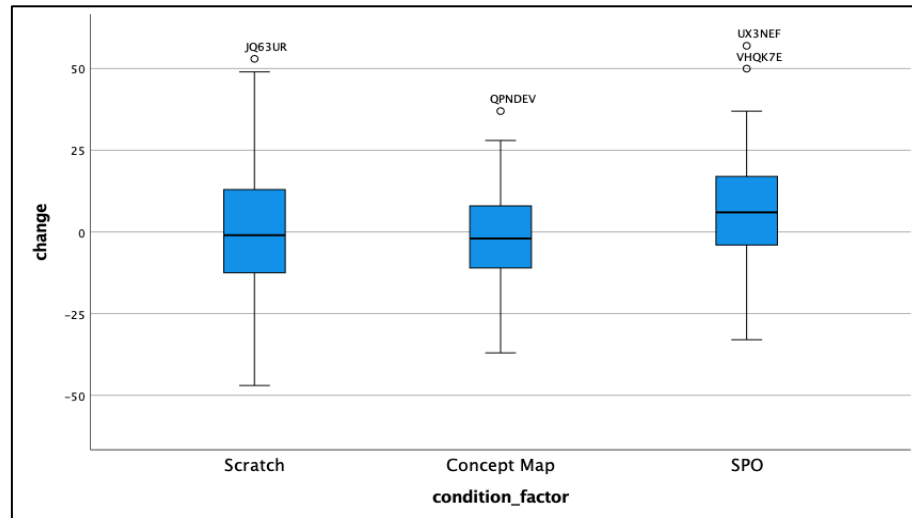
**Figure 12.3**

*Median and Interquartile Ranges of the Conditions for the Post-Assessment*



**Figure 12.4**

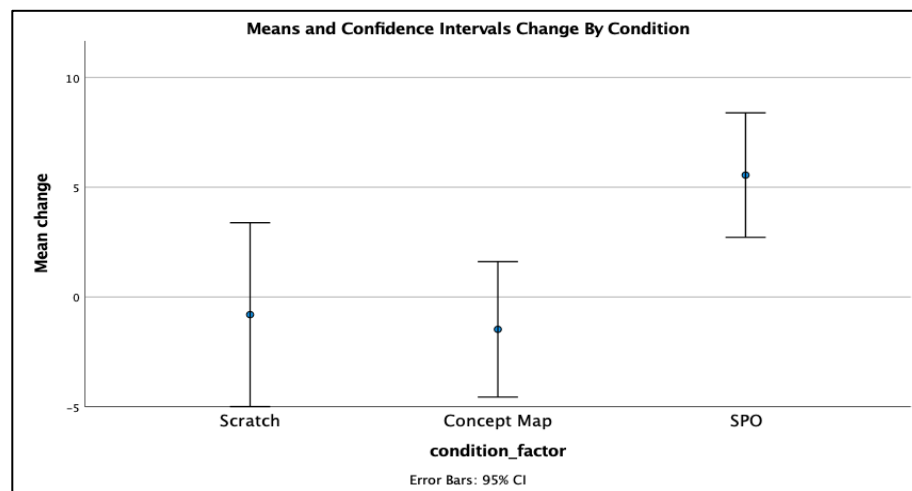
*Median and Interquartile Ranges of the Conditions for the Change*



The results suggest that the mean change for Group A (SPO) does appear to differ from the other two conditions, with little overlap between the SPO and the other two conditions (see Figure 12.5).

**Figure 12.5**

*Means and Confidence Intervals of the Change in Assessment Scores*





However, the descriptive statistics only indicate the direction the results are going, they do not tell us how likely the results are to have occurred by chance.

Therefore, I carried out an ANOVA on the data (see Table 11).

**Table 11**

*The One-Way Within Subjects ANOVA of the Effects of Writing Condition on Change in Scores*

Change	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3643.288	2	1821.644	5.701	.004
Within Groups	104805.238	328	319.528	100	
Total	108448.526	330			

Table 11 shows a summary table for the analysis of variance for this experiment. The ANOVA shows that there was a significant effect of condition ( $F=5.701$ ,  $p=.0004$ ,  $MS=1822$ ). I also computed the effect sizes of the condition.

**Table 12**

*The Effect Size of Writing Condition on Change in Writing Scores*

Change	Point Estimate.	95 % Confidence Levels	
		Lower	Upper
Eta-squared	.034	.004	.076
Epsilon-squared	.028	-.002	.071
Omega-squared	.028	-.002	.071
Fixed-effect			
Omega-squared	.014	-.001	.037
Random-effect			

The effect size of the condition is 0.34 (Table 12), which is a small positive effect of condition on assessment scores.

Post-hoc tests undertaken with Tukey's Honest Significant Differences confirmed that the positive effect revealed by the ANOVA is due to the mean difference between the SPO and Scratch and SPO and Concept conditions, which were both significant at the 0.05 level (see Table 13). There is no significant difference between the Scratch and Concept conditions.

**Table 13**

*Post-hoc Tukey HSD of Writing Condition on Change in Writing Scores*

Condition factor	Condition factor	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Levels	
					Lower Bound	Upper Bound
Scratch	Concept Map	.671	2.637	.965	-5.54	6.88
	SPO	-6.355*	2.320	.018	-11.82	-.89
Concept Map	Scratch	-.671	2.637	.965	-6.88.	5.54
	SPO	-7.025*	2.439	.012	-12.77.	-1.28
SPO	Scratch	6.355*	2.320	.018	.89.	11.82
	Concept Map	7.025*	2.439.	.012	1.28.	12.77

### Quantitative Results Summary

The present study was designed to answer the research question, “*Do seventh and eighth-grade students that use a Single-Paragraph Outline (SPO) before writing a paragraph earn a higher scaled range score on their pre-and post-writing assessments than students who use a concept map and students who do not use a planning tool?*”

From this analysis, the null hypotheses, that there was no difference between the planning conditions, is not supported. Planning with a SPO led to higher writing scores for students over this period of time than either providing students with a concept map or

simply providing scratch paper for planning. While the results were statistically significant ( $p = 0.004$ ), the effect size was small (.34). One possible explanation is that the SPO addresses one element of writing. If this study focused on additional components of the writing process- planning, editing, and revising, there may have been a higher effect size.

When I examined each school's scaled writing scores individually, I noticed that one school had the highest scaled score improvement between the pre-and post-writing assessments. The school's on-site coordinator shared that the students' classroom teacher had explicitly taught the students how to plan their writing with an SPO. The present study's results are similar to what Kellogg (1990) found when he compared three planning conditions -outlining, clustering and no pre-writing tool. He reported that students who were explicitly taught how to outline improved significantly. Furthermore, the students in the outlining condition outperformed the clustering and no pre-writing conditions. Kellogg (1990) posited that the results support the overload hypothesis with regards to outlining because creating a hierarchical outline enables writers to organize their ideas better prior to writing, which allows them to devote more of their cognitive resources to formulating these ideas effectively in a written text.

In the next section, I will present the findings from the qualitative data analysis, which illuminate students' perceptions of the planning tools they used.

## Questionnaire Data Results

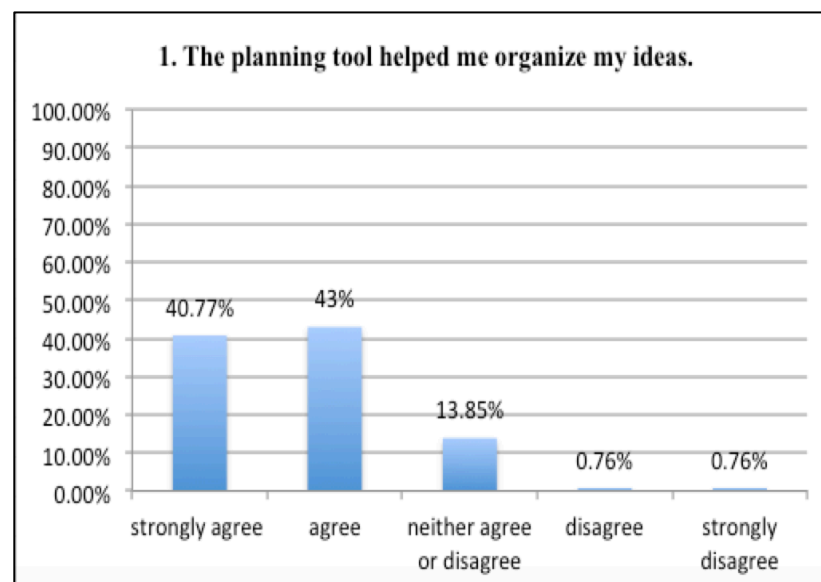
After inputting each student's Likert-type scale ratings in SPSS, I ran descriptive statistics to calculate the frequency distributions. Figures 13 to 13.2 display the percentages of Group A and Group B's responses for each of the three statements.

**Figure 13**

*Percentages of Ratings for Statement 1 from Group A and Group B*

**Statement 1: The planning tool helped me organize my ideas.**

### Group A (SPO)



### Group B (Concept Map)

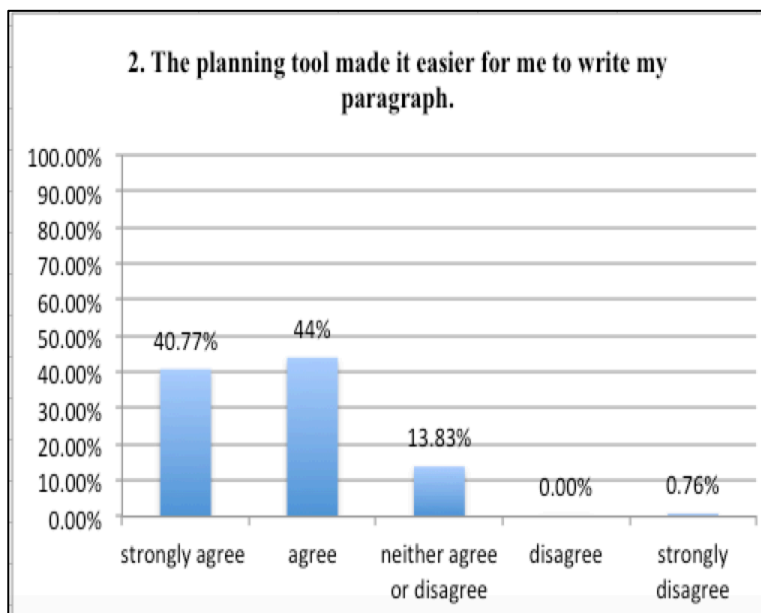


**Figure 13.1**

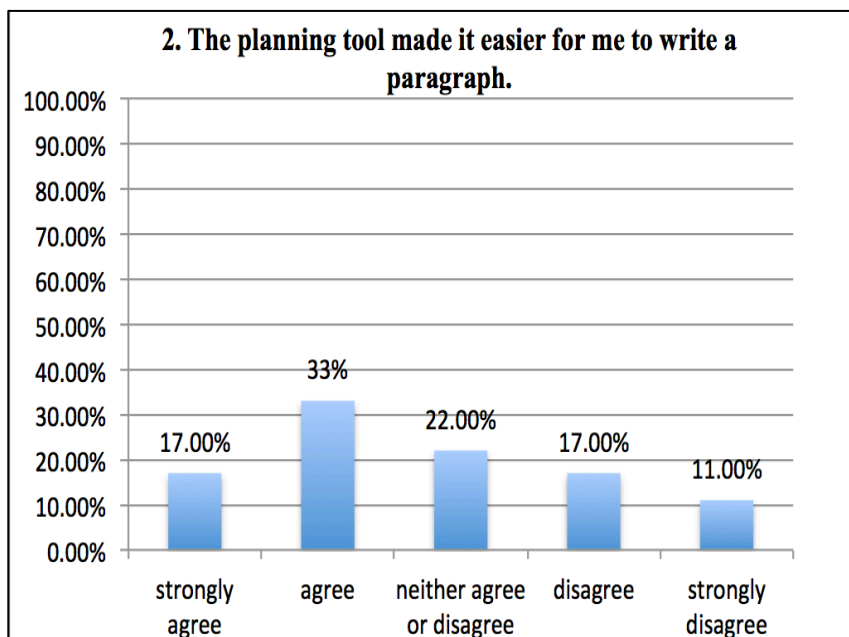
*Percentages of Ratings for Statement 2 from Group A and Group B*

**Statement 2: The planning tool made it easier for me to write my paragraph.**

### Group A (SPO)



### Group B (Concept Map)

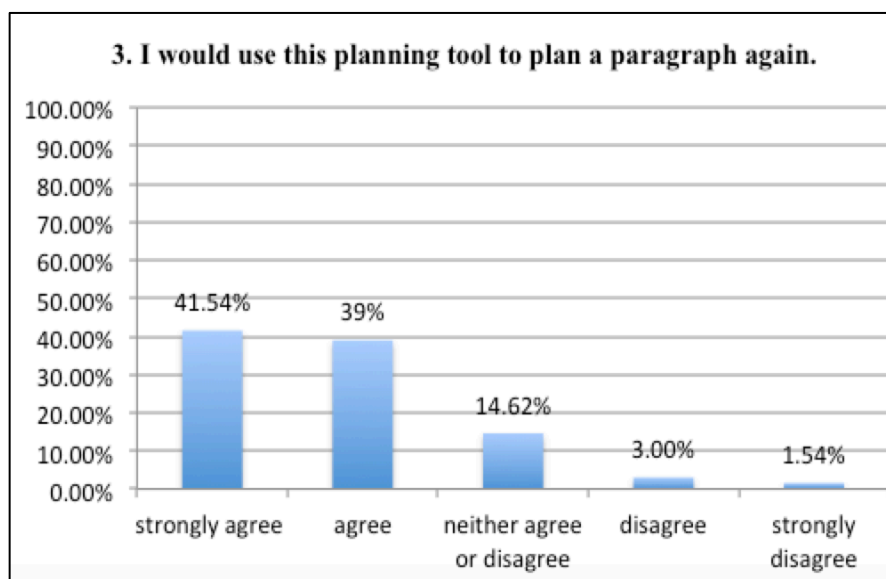


**Figure 13. 2**

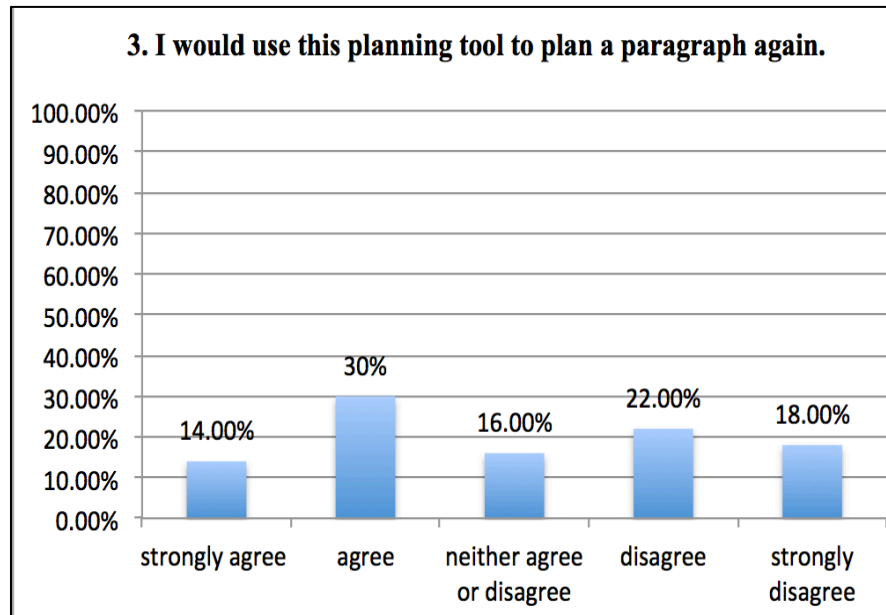
*Percentages of Ratings for Statement 3 from Group A and Group B*

**Statement 3: I would use this planning tool to plan a paragraph again.**

### Group A (SPO)



### Group B (Concept Map)



### Open-Ended Responses and Interview Data Findings

Semi-structured interviews and questionnaires are often used in mixed methods studies to examine a phenomenon (Onwuegbuzie & Teddlie, 2003). Harris and Brown (2010) suggest that questionnaires and interview data sets should be analyzed separately using methods suitable to each; then results can be compared to see if any common messages resonate from both sets of data. Similarly, Onwuegbuzie and Teddlie (2003) contend that triangulation occurs when researchers combine data from multiple sources about the same topic. Harris and Brown (2010) posit that if researchers want to maximize the likelihood that their questionnaire and interview data align, questionnaire items and interview prompts should be highly similar. In this present study, the Likert-scale type questions, the open-ended responses and the semi-structured interview questions were designed to address similar themes about the use of planning tools. In order to examine trends and themes across the qualitative data sets, I generated a chart and added evidence

from both the open-ended responses and students interviews that supported the Hypothesis Codes, when applicable (see Table 14 and Table 15). I created a separate column for students' written open-ended responses, or interview comments, that addressed themes that were not pre-determined in the codes.



**Table 14**

*Sample of Students' Perceptions of the Planning Tool and Organization*

CODE	EVIDENCE SUPPORTING CODE
HELPED ORGANIZE IDEAS	<p>- <i>this planning tool (SPO) <b>helped me organize my ideas</b>, it made it easier for me to write my paragraph and it <b>helped me know how to start my paragraph</b>.</i></p> <p>- <i>it (SPO) helped me <b>break it down</b> and it got easier to write a paragraph</i></p> <p>- <i>it (SPO) helped <b>break it down into pieces</b>, so it helped me write</i></p> <p>-<i>the SPO outline helped me because when mostly I write I get frustrated because I don't know how to put my words. It <b>helped me figure out how to put my words together</b></i></p> <p>-<i>it (Concept Map) helps you <b>keep things in order</b></i></p> <p>-<i>it (SPO) <b>helped me organize</b> how I am going to write it; it was <b>easy for me to organize</b> what I wanted my paragraph to be</i></p> <p>- <i>the (SPO) was helpful because when usually I write by myself with no outline, I usually go all over the place, and <b>this helped me organize my ideas and keep on track</b> and not got off subject or off topic</i></p> <p>-<i>it (Concept Map) helped me <b>remember my thoughts</b></i></p> <p>-<i>it (SPO) helped me because I can <b>put all the important information together</b> / I know exactly where everything goes- <b>feels more organized</b></i></p> <p>-<i>it (SPO) <b>tells you an order</b> and the main things you need when writing a paragraph- like the topic, the central idea, it talks about all the things you need and not what you don't need, gets to the point</i></p>

**Table 15**

*Sample of Students' Perceptions on the Tool Making it Easier to Write/ Not Helpful*

CODE	EVIDENCE SUPPORTING CODE
EASIER TO WRITE	<p><i>-it (SPO) <b>made it easier for me to explain</b> what I was trying to talk about it. We have been using it since 4th and 5th grade, it <b>made it easier for me to write.</b></i></p> <p><i>-it(Concept Map)was <b>easy to put the bad and good things about the character.</b></i></p> <p><i>-I appreciate the planning tool (SPO) because it <b>made it way more easier for me to write.</b></i></p> <p><i>-I felt like this process (SPO) <b>made it easier for me to understand more.</b></i></p> <p><i>-I really like it (SPO)and it <b>really helped me write a paragraph.</b></i></p> <p><i>-It (SPO) was <b>easier to put my sentences together to write my paragraph.</b></i></p>
DID NOT HELP	<p><i>-feels <b>disorganized</b> (Concept Map)</i></p> <p><i>-I didn't like it (SPO) because it didn't make as much sense to me; it <b>didn't help me organize anything</b></i></p> <p><i>-<b>not helpful.</b> It (Concept Map) <b>doesn't have any sections of what you should write or where.</b></i></p> <p><i>- it (SPO) was <b>confusing</b></i></p> <p><i>-I don't find <b>writing in bubbles</b> helpful (Concept Map)</i></p> <p><i>-it <b>did not help- not clear</b> on what to do (Concept Map)</i></p>

## Integration of Quantitative and Qualitative Findings

In mixed method research, triangulation involves the combination of data from multiple data sources on the phenomenon under study (Creswell & Plano Clark, 2007). By using a mixed methods approach, I was able to analyze multiple pieces of data: students' pre-and post-assessment results, their questionnaires, and their interview data. Overall, the integration of the qualitative and quantitative analysis, allowed me to obtain further in-depth information and draw inferences about the impact planning tools have on students' writing.

By reviewing the Likert-scale ratings percentages from the student questionnaires, as well as the open-ended responses and student interviews, I was able to identify trends and patterns. Students rated three statements on the questionnaire that were aimed at capturing their perceptions of the planning tool. In response to statement 1: *The planning tool helped me organize my ideas*, approximately 84% of the students in Group A (SPO) that completed the questionnaire either agreed or strongly agreed with the statement, whereas approximately 58% of students in Group B (Concept Map) agreed or strongly agreed. In response to statement 2: *The planning tool made it easier for me to write my paragraph*. Approximately 85% of students in Group A (SPO) that completed the questionnaire either agreed or strongly agreed that the planning tool made it easier to write, whereas approximately 50% of students in Group B (Concept Map) agreed or strongly agreed that the tool made it easier to write. Lastly, in response to statement 3: *I would use this planning tool to plan a paragraph again*, approximately 81% of students in Group A (SPO) that completed the questionnaire either agreed or strongly agreed that

they would use it again, while approximately 44% of students in Group B (Concept Map) agreed or strongly agreed that they would use it again.

### **Concept Map**

In Group B, out of the 100 students who completed the questionnaire, 33 students answered the open-ended question. Eleven of those students made positive comments about the concept map. For example, they mentioned that they found it easy to brainstorm their ideas, keep things in order and remember their thoughts. During the interviews, I asked students if the planning tool helped them, and to explain why or why not. Of the 17 interviewees, 5 said that the concept map was helpful. Specifically, one student said, “It was easy to jot down the bad and good things about the character and say what was the same and different.” Another student said, “It made it a lot easier than planning in my head.” Conversely, 21 out of the 33 open-ended comments were negative or critical of the concept map. For instance, students expressed that the concept map was confusing, they did not like planning in bubbles, and the tool felt disorganized. Of the 17 interviewees, 12 expressed similar views. One student said, “I like lines better than bubbles.” Another student commented, “the chart did make brainstorming easier but it did not help me when putting my writing together.” When I asked the question to the interviewees, “*Would you use this planning tool again in the future?*,” 2 out of the 17 students said that they would use it again. The present study’s qualitative findings, coupled with the statistical findings, are similar to those of Nesbit and Adesope (2006) who found concepts maps to be effective in supporting the brainstorming of ideas, vocabulary relationships and concept building, but may require further investigation for their use in writing instruction.

### **The Single-Paragraph Outline (SPO)**

In Group A, out of the 130 students who completed the questionnaire, 32 students answered the open-ended question. Twenty-nine of the students wrote a positive comment about the SPO. For instance, they mentioned that they found it helped them organize their ideas, made it easier for them to write, and that it helped them adhere to the topic. Three students said that it was confusing, not helpful, and a waste of time. When I asked the interviewees if the planning tool helped them, and to explain why or why not, two interviewees mentioned that they liked to plan in their heads, so the SPO was not useful for them. Eighteen out of the 20 interviewees expressed that the SPO was helpful. During the interviews, there were some recurring themes. Several students mentioned that the SPO helped them to break down the paragraph because they knew exactly where the topic sentences, details and concluding sentence should go. One student said, “The SPO helped me set up the paragraph; it basically guided me through.” This was echoed by another student who said, “The way it is laid out helps because it gets to the point. Everything is in order and there are steps, so I am not confused about what to write or what to put because it is step by step and that really helps me.” Two interviewees commented on how the SPO helped them stay on track. One student said, “I did find it helpful because when I write by myself with no outline, I usually go all over the place, and this helped me organize my ideas and keep on track and not get off subject or off topic.” Another student said, “Doing it in my head I tend to elaborate and go off topic, so this outline kept me on track.” When I asked the question to the interviewees, “*Would you use this planning tool again in the future?*,” all of the interviewees said that they would use the SPO again.

### **Comparing Both Planning Tools: SPO and Concept Map**

When assigning the conditions for the study, the on-site coordinators assigned groups based on their present ELA teachers' use of the planning tool. For the purposes of not interrupting instruction, they did not want students to be introduced to a new planning tool in the midst of learning a different one. Therefore, I did not foresee speaking with students who had experiences with both planning tools. However, in one middle school, I interviewed five students who were learning the SPO in their social studies class, but not in their English classes. At the end of their interviews, I presented a PowerPoint slide that had screenshots of both planning tools for the students to reference. Then, I asked, "Would you pick either of these tools to plan your paragraph again in the future? If so, which one and why? All five students selected the SPO. One student said, "I would use the SPO over the concept map because it is way more organized - it allows me to plan out my sentences the way it is going to be put in the paragraph." Other interviewees said: (a) "I would pick the SPO because it helps me keeps my thoughts more organized. (b) "the SPO because it organizes your thinking more. You can prepare for your topic sentence, your first, second, and conclusion. When you are ready to write to your final paragraph, you can use all the elements in it and make your sentences better." (c) "I would use the SPO over the Concept Map because it is way more organized. It allows me to plan out my sentences the way it is going to put in the paragraph. Lastly, one interviewee said, "I would choose the SPO because it looks neater to me, it is simple to use and it helps me write more. Whenever you write a paragraph, you write the sentences write next to one another, so it helped me stay organized." These findings broadly support the work of

Kellogg (1990) and Kirkpatrick and Klein (2009) who found that linear outlines help students convert their plans into a logical, cohesive form of writing.

### **Scratch Paper Findings**

Because this study focused on students' experiences using either the SPO, or the concept map, Students in Group C (Scratch) did not complete a questionnaire, and were not interviewed; however, I still reviewed their scratch paper samples. Most students did not use the scratch paper to plan. During my interviews, I first asked students if they typically plan before they write a paragraph. I discovered that only 18% of these seventh and eighth-grade students attempted to plan before writing their paragraphs. Of the 37 student interviewees, 8 said that never plan before writing, 6 said they like to plan their writing out in their heads, 4 said that they plan sometimes, but it depends on the prompt the teacher assigns, 14 said that they do plan, and 3 said that make an SPO. When I asked the follow-up question, "How do you plan?," a majority of students alluded to writing the entire draft, which was evidenced in many of the scratch samples I reviewed (see Figure 15). I was not completely surprised by these findings because they were in line with what Torrance, Fildago, and Garcia (2007) found when they researched pre-planning with middle-school students. Specifically, they observed that only 15% of sixth graders engaged in outlining before writing. Based on hundreds of hours observing writing instruction, Torrance (2016) stressed that "planning is often not taught and is often not required or assessed" (p. 721).





**Figure 15**

*Example of SPO on Scratch Paper from Student in Group C*

Name: [REDACTED]  
 Grade Level: Grade 7  
 Teacher: [REDACTED]

Scratch Paper

1.5. Jonas, the protagonist in the novel The Giver,  
faced many problems throughout the novel.

1. I found out G was going to be released  
 2. this illustrates that since G = released Jonas had to take him w him  
 3. I found out the meaning of the term released  
 4. this illustrates that I had to leave since he'd found out what his father's  
lie was

C.5 As a result, Jonas faced many problems in  
the novel the giver.

### Qualitative Results Summary

This study sought out to examine the impact specific planning tools have on students' writing. In particular, I wanted to assess if student writing improves dependent on the planning tool they use. Students who used the concept map and the SPO expressed that the planning tool assisted them with organizing and brainstorming their ideas. Several studies have reported that visual tools can help novice writers organize their ideas, make their thinking visible and alleviate the cognitive load (Harrington et al., 1998; Kellogg; 1990, Lee & Tan, 2010). However, students in the SPO condition statistically outperformed students in the concept map and scratch paper conditions on their post-writing assessments. Qualitative data helped to shed light on these findings. While some students mentioned finding the concept map helpful, most were critical of its format and

expressed that they did not intend to use it again. In contrast, most students reported that the SPO helped them pre-plan their writing and voiced that they would use it again in the future. One potential explanation may be the format of the SPO. It is a linear outline that is intended to be a road map that students can follow to plan the beginning, middle, and end of paragraph. Furthermore, the structure of the SPO may help alleviate some of the cognitive burdens students may face when writing (Berninger & Winn, 2006, Hayes & Flower, 1980; Kellogg; 1990).

## CHAPTER 5: DISCUSSION

Previous research has examined the impact of pre-writing by often comparing writing samples from students who planned versus students who did not plan before writing (De La Paz, 1997; Harrington et al., 1998; McKeown & FitzPatrick, 2018; Swanson & Hoskyn, 2001). However, few researchers have examined the efficacy of those plans. Several studies assess the impact of planning tools to control groups that employ a “business as usual” approach (De La Paz, 1997; Galbraith & Torrance, 2004; Lee & Tan, 2010; Troia, 2009). Recently, Willingham and Daniel (2021) contend that research that reports outcomes of students receiving an intervention to the outcomes of a similar control group that did not receive the intervention may not be most helpful to teachers since it often becomes a case that something is better than nothing.

Therefore, through a mixed methods research design, this study sought to determine the efficacy of specific pre-planning tools on students’ paragraph writing by assigning students to three different conditions: a group who pre-planned their paragraph by using an SPO, a group that pre-planned their paragraph by using a concept map, and a group that did not plan their paragraph with a specific planning tool other than having scratch paper. Additionally, this study explored the relationship between the specific planning tools and students’ perceptions on writing through a questionnaire, an open-ended question and semi-structured interviews. The cognitive processing theory of writing, the theoretical framework underpinning this research, shaped the statements on the questionnaire, the interview questions, the follow-up probing questions, and the Hypothesis Codes I used throughout the study.

## Overall Findings

Findings from the current study include:

1. Planning with an SPO led to higher writing scores for students over a brief period of time than either providing students with a concept map or providing scratch paper for planning.
2. The majority of students in the study reported that brainstorming and organizing their ideas before writing helped make writing the paragraph easier.
3. The majority of students in Group A who planned their writing with an SPO expressed that the outline helped them organize their ideas before writing, break down the paragraph, and helped guide them through the writing process.
4. Students in Group B had mixed reactions to the concept map. While several commented that it was helpful in brainstorming, most students expressed that it was difficult to plan their writing with.
5. The vast majority of students in this study commented on the format or design of the planning tool they used (e.g. preference to lines, needing more space to write, difficult to write in bubbles).
6. Within the SPO group, the students with the highest pre-and post-assessment scaled scores had classroom teachers that explicitly taught them how to use the tool.
7. Several students in Group A mentioned that they can replicate the SPO on scratch paper; there was some of this evidence found in Group C's scratch paper samples.

## **Study's Findings Relative to Existing Research**

The results of the current research supports or extends the work of other researchers that have studied pre-planning (Fayol et al., 2012; Kellogg, 1990; Kirkpatrick & Klein, 2009; Nesbit & Adesope, 2006; Ojima, 2006). In all of the literature reviewed for this study, planning has been recognized as a critical component of the writing process. Hayes and Flower (1980) identified planning as one of the best ways to reduce cognitive capacity limitations. The results of the present study support previous research that planning tools can facilitate the cognitive needs of novice writers by enabling them to view their ideas on paper (Fayol et al., 2012, Lee & Tan, 2010). While this study found that specific planning tools, such as a concept map or an outline, can improve students' ability to brainstorm or generate ideas, most students reported that using an outline made the writing process easier for them. Reviewing the previous research on this area of study helped to shed light on this study's findings.

### **Linear Outlines- Existing Research and Present Study's Findings**

Students who used the SPO, a linear outline, outperformed both condition groups. The students in Group A also expressed that the SPO helped them organize their ideas. Many of them referenced the outline's linear design. For example, several students noted that having a dedicated space for a topic and concluding sentence, as well as four numbered detailed lines, helped them easily plan the paragraph. The SPO provides students with a road map they can follow to plan the beginning, middle, and end of a unified, coherent paragraph by requiring students to create a complete topic sentence (T.S.) and concluding sentence (C.S.) on the solid lines and supporting details in key words and phrases on the dotted lines. Because students are encouraged to generate

different supporting details on the dotted lines, they tend to be less repetitive and adhere to the main idea or topic of the paragraph (Hochman & Wexler, 2017). During the interviews, several students mentioned that the SPO helped them stay on track and not go off topic.

This study's findings are consistent with the research on using linear outlines. Because a paragraph is a linear entity; the reader can only read one sentence at a time, from beginning to end (Fayol et al., 2012; Hochman & Wexler, 2017). In the same vein, Kellogg (1990) also posits that developing a hierarchical outline enables students to focus on one element of writing at a time. One student in Group A said, "Whenever I write a paragraph, I write the sentences write next to one another, so the SPO layout helps me write the paragraph." These overall findings seem to be consistent with the work of Kirkpatrick and Klein (2009). In their study on the IPAN table, a linear outline, they reported that seventh and eighth grade students sketched an IPAN outline on scrap paper from memory after having explicit instruction on the tool. Kirkpatrick and Klein (2009) attributed this to the format of the IPAN outline. Because the plan was linear, students internalized it, which made it easier for them to transfer the outline into a longer composition (Kirkpatrick and Klein, 2009).

Lastly, several states have adopted ELA standards that require students to use careful planning, drafting and revision to produce high-quality writing (Rourke et al., 2018). Most state tests are designed to assess students' grade level skills outlined in these standards (Rourke et al., 2018). Because students will most likely encounter state ELA test prompts that require expository, argumentative, narrative, or persuasive writing, it is critical that students have access to the tools they need to meet or exceed the standards

(Sacher, 2016). In preparing for the writing tasks on state exams, students may find the SPO helpful in pre-planning their written responses.

### **Concept Maps- Existing Research and Present Study's Findings**

Several students in Group B commented that the concept map was useful in brainstorming, while others expressed that they found the map confusing, unorganized, and that they preferred lines to write in bubbles or circles. In particular, one student said, “the map did make brainstorming easier, but it did not help me when putting my writing together.” This finding is supported in Nesbit and Adesope’s (2006) research on concept maps. In their meta-analysis, they reported concept mapping to be an effective instructional strategy that assists students with brainstorming ideas and concept building, but called for more research with regards to writing (Nesbit & Adesope, 2006). The concept map was originally designed to help students visualize the connection between related ideas (Novak, 1991). Therefore, it may be misappropriated when used as a pre-writing tool. Researchers have noted that one of the challenges of using a concept map for pre-writing is that when students convert their map to a written draft, they tend to find it difficult to take their ideas from the circles and figure out how to present those ideas in an organized, sequential, and logical order (MacArthur, 2006; Hochman & Wexler, 2017).

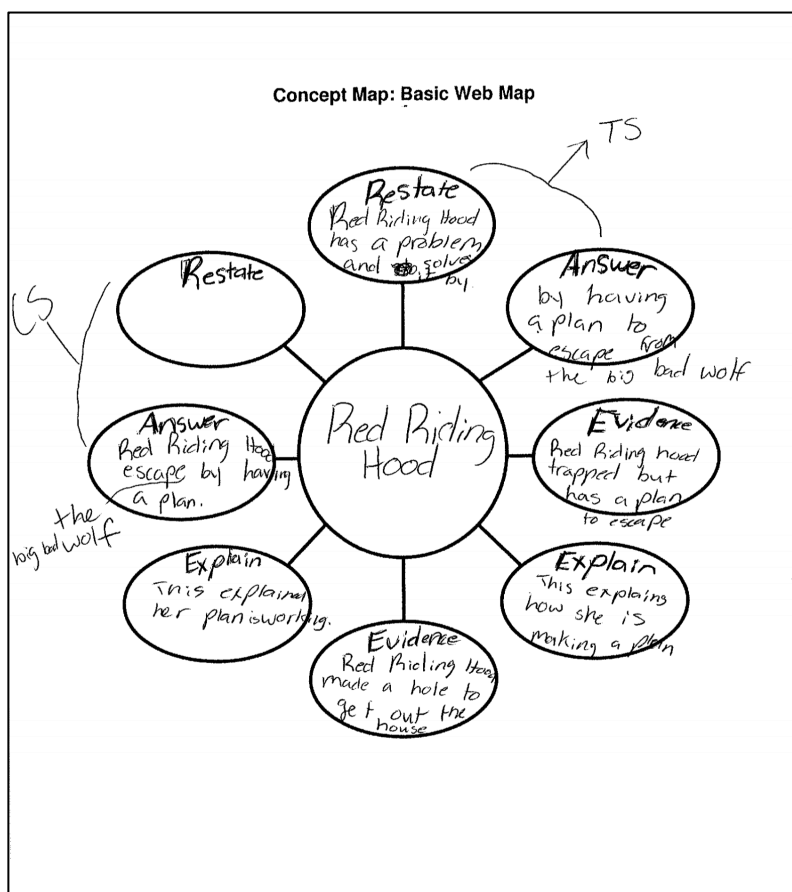
Some students in Group B suggested that the concept map should include lines, or spaces for a topic and concluding sentence. Similar findings were reported in Ojima’s (2006) case study on concept maps with three adult EFL learners. In reviewing the students’ final composition and concept maps, Ojima (2006) found that a student actually included a topic sentence at the top of the concept map, and a concluding sentence at the

bottom because they were trying to create a more organized structure. Interestingly, I also observed student samples where a topic sentence and concluding sentence was included on the map in a possible attempt to make their plan more organized (see Figure 17). Furthermore, during Ojima's (2006) semi-structured interview, the student explained that concept mapping helped her with generating ideas because she could visualize them on paper; however, she also mentioned that she found it difficult to select the most relevant ideas from the map to include in her paragraph. The student explained that she often skips the concept mapping step in the writing process because she finds it to be confusing, which was another similar finding in the present study.



**Figure 16**

*Example of Concept Map with arrows pointing to a TS (Topic Sentence) and CS (Concluding Sentence)*



### **Explicit Instruction- Existing Research and Present Study's Findings**

Another important finding in this study is that students who had the most improved scaled scores from the pre-to the post-assessment were explicitly taught how to use the SPO. This finding supports previous research about the impact of explicit instruction and students' writing progress (Chalk et al., 2005; Graham et al., 2016; McKeown & FitzPatrick, 2018; Swanson & Hoskyn, 2001). Graham and Perin (2007) posit that teaching novice writers strategies for planning is critical for producing strong and lasting effects on writing skills. This present study's finding reflect those of Chalk,

Hagan-Burke, and Burke (2005) who found that when students are explicitly taught planning strategies, their written products improve in clarity, cogency, fluency, and other measures of quality. It has also been found that embedding self-regulatory strategies in writing instruction has positively impacted student writing performance (Chalk et al., 2005; De La Paz, 1997). For instance, self-regulation strategies, such as using mnemonics, have been found to alleviate the cognitive load by helping students remember specific components of their writing, and helping them logically organize (Graham & Harris, 1999). In this study, the classroom teacher taught students how to use cues or categories on the side of their details lines on the SPO. Figure 16 is an example of an SPO that includes student generated cues (e.g. *before* and *after*). On several SPOs, students added an *evidence* and *analysis* cue next to their detail lines. In addition, 5 interviewees in Group A mentioned that the SPO helped them to include textual evidence in their paragraph.

**Figure 17**


*Student in Group A's SPO with Before and After Cues next to Detail Lines*

**Single-Paragraph Outline**

Name: [REDACTED] Date: [REDACTED]

T.S. After Junior attended Beardon High-school, his  
perception of himself and other changed.

---

before { 1. Vulnerable/sickly + goofy → bullied / p. 31 

2. lonely / 1 friend & draws alone / p. 4 & 5

after { 3. Confident / believed he could do everything / p. 189

4. Social / had a lot of friends / p. 127

C.S. Junior, the protagonist of... PART-TIME  
INDIAN, changed the way he perceived

### **Theoretical Framework and Present Study's Findings**

The process of writing places significant cognitive demands on students, especially novice writers. Researchers have shown that overburdening the working memory inhibits writing effectiveness (Hayes & Flower, 1980; Jagaiah et al., 2019; & Rijlaarsdam et al., 2003). In the present study, students expressed finding planning tools helpful before writing. In this study, the majority of students identified the SPO as the planning tool that helped them organize their ideas, break down the paragraph, adhere to a topic, and include textual evidence in their writing. Students also expressed that the SPO made the writing process easier, which supports existing research that links linear

outlines with lessening the cognitive demands of writing (Galbraith & Torrance, 2004; Kellogg, 1990; Rijlaarsdam et al., 2003; Torrance, 2016). In addition, all interviewees reported that they would want to use the SPO to plan their writing in the future. Of the 37 students interviewed, 5 students said that enjoyed using the outline, and that it helped them to become a better writer. Similarly, in their study of the TREE strategy (a *T*opic sentence, provide *R*easons for their opinion, *E*xamine the reason from the audience's perspective, and provide an *E*nding), with sixth-grade students, Graham and Harris (1989) found that students' perceived that the strategy was the reason their writing scores improved. Lastly, in the present study, some students replicated the SPO on scratch paper, on demand, without being directed by their teachers to do. During an interview, one student said,

“Let's say I had to take a test, I will picture the SPO in my head and I will just remember the dotted lines, and the T.S. and C.S. and my details and then draw it out on paper. I don't have to really struggle at all.”

These findings support the research that has shown that ample practice with planning can make the process relatively automatic for students (Deane et al., 2008; Kellogg, 2001; Rijlaarsdam et al., 2003; Torrance, 2016).

## **Limitations**

This study had several limitations. First, it was not possible to randomize conditions at the participant level, which means that the teaching groups, the grades and schools could have impacted the students' progress scores. Because of the COVID-19 pandemic, a large percentage of students in both districts had to transition at points to remote learning. The focus of this study was on assessing SPOs and concept maps that

were written by hand, and not digitally, so the sample of the study was limited to only in-person students. As predicted, there was a decrease in student participation. For example, there were 702 pre-assessments collected, but the matched data of the pre-and post-assessments was 331. A smaller sample size reduced the statistical power of the study, so the findings may not generalize.

Lastly, the study was conducted over a brief period of time; therefore, the time spent on instruction of both planning tools was limited. Due to travel restrictions, I could not observe classroom instruction of the SPO and the concept maps, which may have resulted in additional insights that would have enhanced the study's findings.

### **Delimitations**

While there are many forms of writing, this study solely focused on expository writing. The district schools selected had several teachers trained in using the Hochman Method. This could pose potential challenges when trying to generalize the study's findings because many students were explicitly taught how to use the outline by well-trained teachers in the method.

The study was conducted in two districts in Northern Louisiana. Both districts have small percentages of English Language Learners, so the study may need to be replicated with schools with greater percentages of ELL students to determine if the findings generalize.

## **Recommendations for Future Research**

The Single-Paragraph Outline is designed for students to write one paragraph. In the Hochman Method, once students demonstrate proficiency using the SPO to write paragraphs, they are taught to use a Multiple-Paragraph Outline (MPO), which is a linear outline designed to help students write a composition. A natural progression of this work would be to study this cohort of middle-school students' writing skills in high-school after they have been taught to use an MPO to plan their essays. The Single-Paragraph Outline was designed for expository writing. Recently, a third-grade teacher began using SPOs to plan narrative writing, and shared her work with me. Given that stories have a beginning, middle and end, the teacher expressed that students are using multiple SPOs to plan their stories (see Figure 18). The idea of using an SPO for other forms of writing i.e. narrative writing, lab reports and poetry could be explored in further research.

**Figure 18**

*Example of Narrative SPO from Third-Grade Student*

**Narrative Writing Task**  
**SPO 1 – Beginning**

(establish setting or situation in TS)  
**T.S. -** One fine evening, I was enjoying my dinner when suddenly I heard a growl.

first 1. heard loud growl in woods

next 2. men grabbed guns

then 3. run to edge of woods

(Insert dialogue in CS)  
**C.S. -** "It's a grizzly bear!" my men shouted.

In light of the remote learning, there may need to be future research on using linear planning tools, like the SPO, digitally. Existing research has shown that when writing is done by hand, children generated more words, and, with more ideas, than when typing on a keyboard (Blair et al., 2002). Research has also found that older students are more effective when they take notes by hand, than when they do so on their laptop (Unzueta, 2009). Because the SPO is intended for students to jot down ideas quickly from head to hand, and not by typing on a keyboard, a future study into the use of a digital stylus that can allow students to still plan their writing by hand, even on a device, is recommended.

## Recommendations for Practice

Writing is a powerful tool for effective communication, and it also improves one's capacity to learn (Graham et al., 2020). The process of writing places significant cognitive demands on the writer; therefore, teaching novice writers strategies for planning is critical (Cutler & Graham, 2008; Graham et al., 2020). Findings from this current study suggest that teaching students to plan a paragraph using a linear outline may lessen the need to juggle several cognitive processes during drafting, and help students predominantly focus on converting their ideas into text (Fayol et al., 2012; Kellogg, 1990; McCutchen, 2006; Troia 2009).

Concept mapping has been found to be an effective instructional strategy that assists students in brainstorming ideas, increasing vocabulary, and enhancing reading comprehension (Nesbit & Adesope, 2006; Ojima, 2006). However, in this study, several students reported that the map did not help them convert their ideas into a paragraph. McCutchen (2006) suggests, if students engage in a brainstorming activity that uses a concept map prior to writing, they should convert the map to an outline, which provides a linear organization. A paragraph is a linear entity; the reader can only read one sentence at a time, from beginning to end (Fayol et al., 2012; Hochman & Wexler, 2017). Therefore, teaching students to plan a paragraph using a linear outline may lessen the need to juggle several cognitive processes during drafting, and help students predominantly focus on translating their ideas into text (Fayol et al., 2012; Kellogg, 1990; McCutchen, 2006; Troia 2009).

While instruction in planning has been shown to improve students' writing performance, it is not enough to simply hand students a plan without teaching them *how*



to actually use that plan (Graham, 2007). Findings from this study suggest that explicitly teaching students how to pre-plan their paragraphs with a Single-Paragraph Outline (SPO) can result in improved writing performance.

Lastly, using routine planning strategies can reduce some of the cognitive burden involved in remembering structures and formats. With ample practice, creating outlines can become relatively automatic for students, and easily retrieved from long-term memory (Deane et al., 2008; Kellogg, 1990; Rijlaarsdam et al., 2003; Torrance, 2016). A significant finding in this study was that some students replicated the SPO on scratch paper without being prompted by their teachers.

Given the lack of studies focused on planning tools, it is my hope that this research contributes to the field's understanding of how deliberate, repeated practice of specific planning tools may become a stored plan in students' long-term memory; thus, alleviating the cognitive burdens of writing for students by helping them organize their thinking.

**Directions:** Choose a character from a book, short story, or play. Write a paragraph about how that character changes in the story.

[illegible]

## APPENDIX B

### POST-ASSESSMENT WRITING PROMPT

Name: \_\_\_\_\_

Grade Level: \_\_\_\_\_

Teacher: \_\_\_\_\_

## Post- Assessment

**Directions:** Choose a character from a book, short story, or play. Write a paragraph about a problem the character experiences and how they tried to fix that problem.

[illegible]

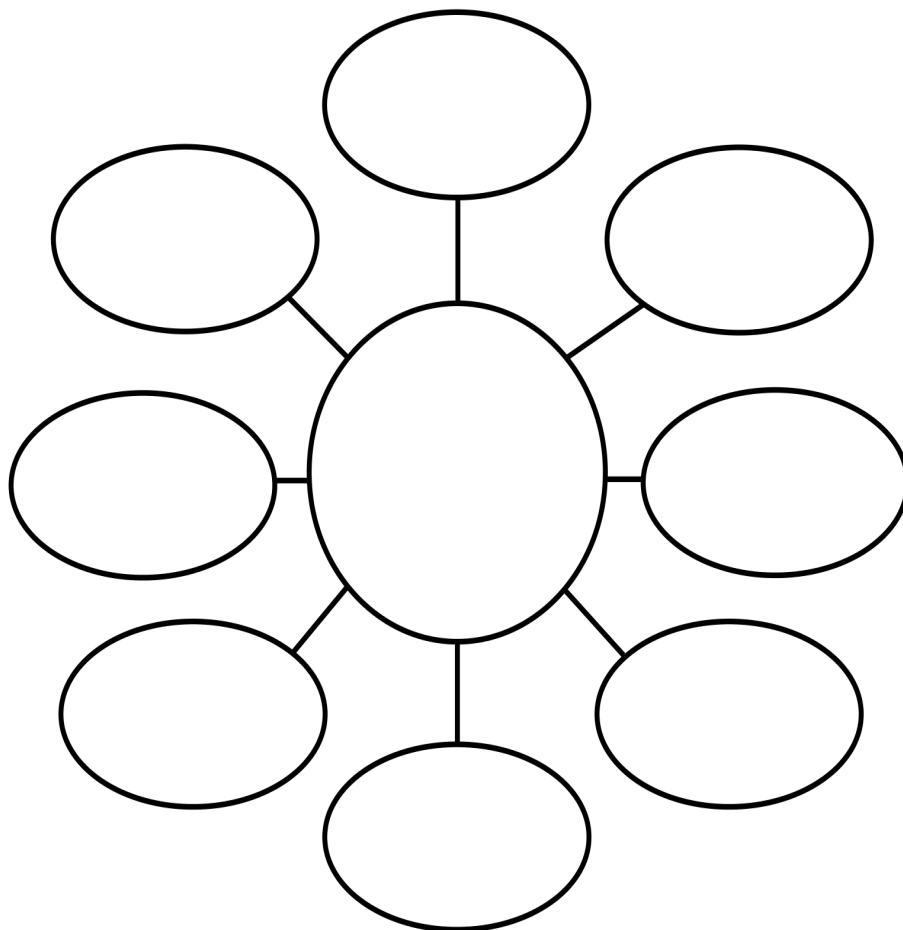
**APPENDIX C**  
**PLANNING TOOL 1. – SINGLE PARAGRAPH OUTLINE**

<b>Single-Paragraph Outline</b>	
Name: _____	Date: _____
T.S.	<div style="background-color: #f0f0f0; height: 100px; border: 1px solid #ccc;"></div>
1.	<div style="background-color: #f0f0f0; height: 40px; border: 1px solid #ccc;"></div>
2.	<div style="background-color: #f0f0f0; height: 40px; border: 1px solid #ccc;"></div>
3.	<div style="background-color: #f0f0f0; height: 40px; border: 1px solid #ccc;"></div>
4.	<div style="background-color: #f0f0f0; height: 40px; border: 1px solid #ccc;"></div>
C.S.	<div style="background-color: #f0f0f0; height: 100px; border: 1px solid #ccc;"></div>

**APPENDIX D**  
**PLANNING TOOL 2. – CONCEPT MAP**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Concept Map: Basic Web Map**



## **APPENDIX E**

### **SCRATCH PAPER**

Name:  
Grade Level:  
Teacher's Name:

**Scratch Paper**

## **APPENDIX F**

### **SEMI-STRUCTURED INTERVIEWS - SAMPLE QUESTIONS**

1. Do you typically plan before you write a paragraph? If so, please explain how you plan.
2. Did you find the planning tool used in this study helpful? Why or Why not?
3. Would you use the plan in the future? Why or Why not?
4. Is there anything else that you would like to share with me about this tool?

## APPENDIX G

### 2020 PARENT CONSENT FORM

Dear Parent or Guardian,

I am the Co-Executive Director of The Writing Revolution (TWR) and am currently pursuing my PhD in At-Risk Literacy at St. John's University. I am conducting a study within your district to learn more about the impact planning has on student writing.

To conduct my study, students will be asked by their ELA teacher to complete two writing tasks about the texts they are learning. While all students will be asked to complete the writing tasks as part of their schoolwork, you can decide whether or not you want your child's writing tasks to be part of the study. You can change your mind at any time.

Along with the writing tasks, your child will be asked to complete a survey about the writing process. They may also be asked to answer a few questions about their experience with the writing task in a short interview via Zoom.

All data about your child will be kept confidential. I will not share any individual information about your child with anyone, nor will your child be identified in any reports. All information will be presented in aggregate (all together) in order to learn more about the writing process. I will store all individual records securely.

Participation in the study is completely voluntary. Furthermore, your child's participation will not affect his/her class grades in any way

If you have any questions about this study, please contact me at [dzoleo@thewritingrevolution.org](mailto:dzoleo@thewritingrevolution.org) or 347-527-0248.

Thank you for your assistance.

Sincerely,  
Dina Zoleo

---

**Please complete this form and return it to your child's teacher.**

- ☐ I Approve – My child may participate in this study.
- ☐ I do NOT Approve – My child may NOT participate in this study.

Student's Name (print): \_\_\_\_\_ School: \_\_\_\_\_

Parent/Guardian Name (print): \_\_\_\_\_

Parent/Guardian Signature: \_\_\_\_\_ Date: \_\_\_\_\_



## APPENDIX H

### NO MORE MARKING- A STUDY REPORT SUMMARY



#### Assessing Primary Writing: finding the best approach

A Study Report Summary



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## The challenges of assessing writing

The traditional method of assessing written tasks like narratives and essays is for markers to grade each piece of writing using a rubric. This method has been widely used for decades in many different countries. In England, this is how pupils' writing is assessed at the end of Year 6. Teachers use a rubric called the **Teacher Assessment Framework** (TAF) to assess their pupils' writing, and a sample of those teacher judgements are then moderated by local authorities.

Comparative Judgement (CJ) is a different way of assessing writing. Instead of using a rubric like the TAF, teachers read two pieces of writing. They then decide which of the two they think is the better piece of writing. Each teacher will make a series of these judgements, and many different teachers will participate in judging. Then, these judgements are combined together to place every piece of writing on a consistent measurement scale.

At No More Marking, we provide online Comparative Judgement software, and currently over 1,000 primary schools in England are using this approach to assess their pupils' writing.

## Study questions

One of the most frequent questions people have about Comparative Judgement is how teachers make their judgements. Unlike the TAF with its very specific features, with Comparative Judgement teachers are free to make a holistic professional judgement about 'the better piece of writing'. Often, teachers find this very liberating, but they also want to know if it leads to the same results as a rubric, or if it rewards different features of writing. An important part of answering this question is to find out if a script that got a certain grade with Comparative Judgement would get the same grade with the TAF.

This study was funded by NESTA and carried out by No More Marking and Anne Pinot de Moira, Consultant (Statistics & Assessment Research) and Honorary Norham Fellow, Department of Education, University of Oxford.

Before we can attempt to answer that question, however, we have to answer another one. We need to know how internally consistent each approach is: that is, if the same piece of writing would get the same TAF grade from two different markers, or the same CJ grade from two different administrations of it. We can't work out if the two systems agree with each other until we know if they agree with themselves!

And that also leads us on to another question: how long does it take each system to achieve an acceptable level of internal consistency? For example, one system might achieve better consistency than another, but if it takes a very long time to do so, we might conclude that this greater consistency is not realistic.

So we have three important, linked, research questions. These are the three questions we set out to answer in this study. This study was funded by NESTA and carried out by No More Marking and Anne Pinot de Moira, Consultant (Statistics & Assessment Research) and Honorary Norham Fellow, Department of Education, University of Oxford.

- Reliability: How internally consistent is each approach?
- Efficiency: How long does it take for each approach to achieve equivalent internal consistency?
- Validity: Is each approach rewarding the same features of writing?

## Study design

We recruited 9 schools as participants. Their 349 Year 6 pupils completed a **writing task** in independent conditions in March 2020. Each piece of writing was graded in two different ways: once with the TAF, and once using Comparative Judgement.

For the TAF grading, we recruited 30 experienced KS2 teachers, and an experienced KS2 senior local authority moderator. The teachers worked through official local authority training materials and then took part in an online TAF training session with the senior moderator. They were then given a pack of 117 pieces of writing to grade. The senior moderator graded every single piece of writing. In total, therefore, every piece of writing was graded by the senior moderator and at least eight other teachers. The TAF allows teachers to award one of three grades: Working Towards (WTS), Expected Standard (EXS) or Greater Depth (GDS). For the purposes of this study, we subdivided each grade into three, giving us nine grades in total: GDSa, GDSb, GDSc, EXSa, EXSb, EXSc, WTSa, WTSb and WTSc.

## Question

# 1 How reliable is each approach?

First, we found out how frequent grade inconsistencies were, using the 'wide' 3-grade system. For the TAF, the chance that a particular piece of writing would be given the same grade by two different markers was 64 %. For CJ, the chance that a particular piece of writing would be given the same grade by two different administrations of the CJ process was 86 %.

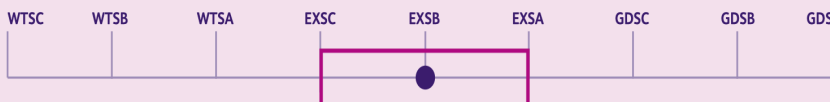
Second, we found out the magnitude of these inconsistencies using the 'fine' nine-grade system. To work this out for the TAF, we considered the extent of the inconsistency we might expect between two different markers. We calculated this in terms of margins of error, and we found that we would expect the second marker to disagree by up to plus or minus two grades with the first marker. With Comparative Judgement, we found that on a second administration we would expect the grade awarded to differ only by up to plus or minus one fine grade.

Finally, we estimated the accuracy of the grading. For the TAF the chance that any individual marker would agree with the senior moderator was 70 %. For CJ, the chance that the grades derived from subsequent CJ administrations would agree with the first administration was 88 %.

## TAF



## Comparative Judgement



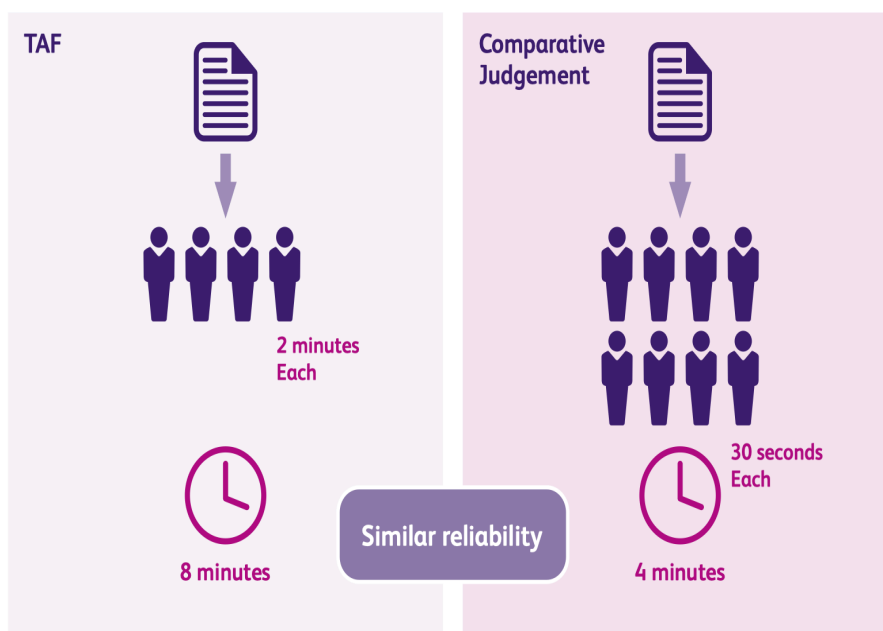
So Comparative Judgement **reduces** the frequency of errors and inconsistency and **reduces** the magnitude of errors and inconsistency compared to the TAF.

## Question

## 2 How long does each approach take?

The previous figures compare one Comparative Judgement session with single grading using the TAF. One known way to improve the reliability of TAF-style marking is multiple marking – that is, to double or triple mark each piece of writing. You can then take an average of all the different grades, and this average is typically more consistent than any individual grade. We found that you would need to aggregate four separate individual TAF grades – that is, to quadruple-mark each piece of writing – in order to reach the level of reliability equivalent to that of a single Comparative Judgement session.

A conservative estimate is that quadruple marking each piece of writing would take approximately 8 minutes per piece of writing. We have more precise information for how long it takes to run a single administration of Comparative Judgement: 4 minutes per piece of writing.



Comparative Judgement achieves a similar level of reliability to the TAF in **half the time**.

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